Supreme Court of the United States

OCTOBER TERM, 1927.

No. 285.

HOLLAND FURNITURE COMPANY,

Petitioner,

vs.

PERKINS GLUE COMPANY,

Respondent.

BRIEF ON BEHALF OF RESPONDENT PERKINS GLUE COMPANY.

Brief Statement of the Case.

This suit was brought in equity by Perkins Glue Company, charging infringement of claims 13, 28, 30, 31 and 38 of Perkins' U. S. Reissued Patent 13,436 for Glue and Method of Making the Same.

For convenience the parties will be referred to herein as plaintiff and defendant as they were in the District Court.

The District Court found the claims in suit valid and infringed (279 Fed., 457) and entered an interlocutory decree accordingly (Rec., p. 340). Defendant, Holland Co., appealed, but this appeal was later withdrawn. An accounting was proceeded with under the interlocutory decree and the Master filed his report awarding the plaintiff, Perkins Co., $30,802.55 (Rec., p. 608). Thereafter and after the coming

down of decisions adverse to plaintiff in the 2nd C. C. A. (287 Fed., 109) and 7th C. C. A. (292 Fed., 596), the District Court reversed its interlocutory decree and entered a decree holding that most of defendant's glue did not infringe (Rec., p. 637). From this final decree plaintiff appealed to 6th C. C. A., which handed down an opinion in disagreement with said decisions of the 2nd C. C. A. and 7th C. C. A. and reversing the final decree of the District Court below (18 Fed., 2d, 387) (Rec., p. 645). From this decision of the 6th C. C. A., writ of certiorari was granted by this Court.

Prior to Perkins, numerous starch adhesives had been used for generations, such as the well known dextrine mucilage, library paste, and starch sizing solutions used for stiffening fabrics, much as starch is used in the laundry. Before Perkins no one had developed or invented a starch or vegetable adhesive which had the necessary qualities and adhesiveness of animal **veneering glue**; the exacting requirements of this art being such that the prior starch adhesives were inadequate therefor and different in kind from the glue of the patent.

In all the thousands of pages of testimony accumulated in the lengthy litigation on the patent in suit **there is not a statement by anybody to the effect that anybody ever satisfactorily glued together two pieces of wood with a starch glue until Mr. Perkins did it.** Nor is there a word of evidence to the effect that any starch adhesive was ever produced prior to Perkins which had the capabilities of gluing together two pieces of wood as is done in furniture veneering with animal glue.

Perkins produced this new starch glue and it has gone into wide and extensive use, supplanting the use of animal glue in furniture veneering and so revolutionizing the veneer gluing art.

The question before this Court as we see it, is whether, as plaintiff contends, the product claims of this patent shall be interpreted according to the clear and natural meaning of

their very explicit terms, or whether, as defendant contends, the claims shall have read into them the limitation that the product claimed is only covered when the product is produced by the particular preferred process or from the particular preferred base set forth in the Perkins patent.

Perkins in discovering this new glue product, necessarily discovered a method of making it and in the patent he describes his *preferred two step process*, for making the glue, according to which two step process, starch is treated in a first step with chemicals to degenerate it and produce a starch base, and then in a second step this starch base is dissolved in a limited amount of water with caustic alkali to produce the glue. **The patent also points out, however, that in many cases the first step or preliminary treatment of the starch may be omitted and the glue made directly from starch without the preliminary degeneration.**

Defendants' glue in question is produced by the latter method, but we submit since the *same product* is produced the product claims are infringed. Infringement of the process claims is not before this Court. **Only the question of infringement of the glue product claims 28, 30 and 31** is here involved. The process by which Perkins achieved his new product is discussed because certain of the lower courts have held, and defendant contends, **that the glue product claims are limited to Perkins' preferred process**, a conclusion which we submit **is unwarranted both in law and fact.**

Perkins attained his vegetable glue by using a starch not too far degenerated (i. e., not to soluble starch or dextrine) and by using therewith a small amount of water (about 3 parts or less based on the weight of the starch) and by dissolving with alkali instead of acid. **Defendants obtain the same glue** by using the same amount of water and also a starch which has not been degenerated to the dextrine or soluble starch stage, and dissolving with alkali like Perkins. The prior art did not mention any such glue nor did it tell how to make it. The prior art formulas failed to produce the glue of the patent mainly because they either used *sol-*

uble starch or dextrine, or bursted the starch with *acid* to produce a dextrine paste or else used *too much water.*

It is plaintiff's contention that no one before Perkins had made a glue having these essential characteristics, to wit: it is composed of starch which is dissolved without acid and in about 3 parts of water or less, and has substantially the adhesiveness and properties of animal veneering glue.

Perkins patent in suit was granted with five groups of claims, covering separate but related improvements, to wit:

(1) *Product* claims covering and characterizing the new glue as a wood glue comprising starch dissolved in about 3 parts or less by weight of water with caustic alkali and having the adhesiveness and properties of animal glue.

(2) *Product* claims drawn to a glue *base* as an *intermediate* product, comprising starch which has been degenerated to serve as a *base* from which to make the glue.

(3) *Process* claims drawn to the process of degenerating the starch with chemicals to produce said base (so-called first step claims).

(4) *Process* claims *intended* to cover the process of making the glue by dissolving the starch in about 3 parts or less of water with caustic alkali (so-called second step claims).

(5) *Process* claims drawn to cover specifically the two step process for maki g the ultimate good as animal glue, by first degenerating a starch with chemicals to produce the degenerated starch base and then dissolving the degenerated base in about 3 parts or less of water with caustic alkali to produce the glue (two-step claims).

The glue product claims in suit and the only claims in issue here are as follows:

> "28. **A glue comprising cassava carbohydrate rendered semi-fluid by digestion and having substantially the properties of animal glue.**

30. A wood and fiber glue formed of a starchy carbohydrate or its equivalent by union therewith of about 3 parts or less by weight of water and alkali metal hydroxid.

31. A wood and fiber glue containing amylaceous material as a base dissolved without acid in about three parts of water or less, and being viscous, semi-fluid and unjellified."

In claim 28 "cassava carbohydrate" means cassava starch, which was the kind of starch Perkins found preferable. Defendants also use the cassava starch.

The patent has been the subject of much judicial consideration in all of which these product claims were either held to be valid or their validity was accepted by the Court.

In the following cases these claims were held *infringed.*

Perkins Glue Company vs. Solva Waterproof Glue Company, et al., in the District Court for the Northern District of Illinois, where the late Judge Sanborn at final hearing held certain claims of each group, including the above mentioned product claims, valid and infringed (223 Fed., 792).

This decision of Judge Sanborn was sustained respecting the above mentioned product claims 28, 30 and 31 and some others, by the 7th C. C. A. (251 Fed. Rep., 64).

Perkins Glue Company vs. Hood, et al., and same vs. West Michigan Furniture Company, Western District of Michigan (279 Fed. Rep., 454), Judge Sessions holding all of the above quoted product claims and two process claims valid and infringed.

In this case in the District Court below Judge Sessions in his interlocutory decree held these same product claims 28, 30 and 31 valid and infringed (279 Fed., 457).

Perkins Glue Company vs. Standard Furniture Company, et al., Northern District of New York (279 Fed. Rep., 458),

Judge Cooper holding the same product claims valid and infringed.

Judges Sessions and Cooper accepted and applied the construction of the patent adopted by the 7th C. C. A. in the Solva case, and upon this construction based their findings of infringement.

In this case, the 6th C. C. A. below held these claims valid and infringed (Rec., 645-660).

In the following cases purporting to accept the construction of the patent by the 7th C. C. A. in the Solva case, the courts held *no infringement* on the ground that the product claims should be limited to Perkins' preferred two step process, although such process is not referred to in the claims in question.

Perkins Glue Company vs. Gould Manufacturing Company and Perkins Glue Company vs. Wisconsin Chair Company (280 Fed. Rep., 728), Eastern District of Wisconsin, tried together before Judge Geiger.

Perkins Glue Company vs. Standard Furniture Company, 2nd C. C. A. (287 Fed. Rep., 109), reversing Judge Cooper and holding the claims not infringed.

Perkins Glue Company vs. Gould Manufacturing Co., et al., 7th C. C. A. (292 Fed. Rep., 596), affirming Judge Geiger holding the claims not infringed.

Perkins Glue Company vs. Crandall Panel Co., Inc., in the Western District of New York (294 Fed. Rep., 135), the Court stating in effect that it was bound by the decision of the 2nd C. C. A. in the Standard Case.

The final decree of the District Court below in effect reversing its former decision and finding no infringement as to most of the glue involved (Rec., p. 637).

In all of the above cases the evidence as to the prior art and the place of the plaintiff's patent in the art was substan-

tially the same, and the character of the infringement was also substantially the same, as is set forth in detail hereinafter. Indeed, **none of the Courts has assumed to find any difference in the alleged infringing products.**

It is conceded, we understand, that these product claims 28, 30 and 31 are valid. It is also conceded, we believe, that **these product claims read squarely on defendants' product** in issue here.

The 6th C. C. A. below, therefore, quite properly held these claims valid and infringed.

The 2nd C. C. A. in the Standard Case (287 Fed., 109) and the 7th C. C. A. in the Gould, et al., Cases (292 Fed., 596), **found no infringement by reading into these product claims specific process limitations which are not there.** In other words, they found that the glue (although the same as that of the patent), was made by the one step process (without the preliminary step) and that these broad product claims are valid as covering the glue *only* when it is made by the two step process (including the preliminary or first step) with the result that these *product* claims 28, 30 and 31 (which are in no way limited on their face to whether the glue is made by the one step process or the two step process) have had read into them the specific features of the narrower two step process claims, making them of the same scope as the narrow two step process claims. This, we believe, is contrary to the well settled rule of law that **infringement cannot be avoided by reading into broad claims specific features or details claimed in narrower claims** (Los Angeles Co. vs. Aeolian Co., 143 Fed., 880, 885; 75 C. C. A., 88 (9th C. C. A.); Mast Foos & Co. vs. Dempster Co., 82 Fed., 327, 333; 27 C. C. A., 191 (C. C. A., 8th); Bresnahan vs. Tripp Co., 102 Fed., 899, 900; 43 C. C. A., 48 (1st C. C. A.); National Co. vs. American Co., 53 Fed., 367, 370; 3 C. C. A., 559 (3rd C. C. A.).

In alleged justification of their departure from this well settled rule of law, the 2nd C. C. A. and 7th C. C. A. decreed non-infringement on the ground, (1) that plaintiff filed a

disclaimer as a result of the early litigation on the patent, which had the effect to so limit those broad product claims to the two step process, (2) the prior art required such limitation, and (3) plaintiff failed to appeal from Judge Sanborn's final decree in the Solva Case.

The disclaimer question arose as follows:

The Reissue Patent 13,436 in suit contained 38 claims. After the decision of the 7th C. C. A. in the Solva suit (251 Fed., 64), plaintiff filed a disclaimer of "claims 1, 3, 4, 6, 7, 8, 16, 24, 25, 26 and 27" and disclaimed "from claims 9, 10, 11, 12, 13, 14 and 38 of said Reissued Letters Patent No. 13,436" certain subject matter (Rec., p. 231).

It will be noted that product claims 28, 30 and 31 which are the claims here relied upon, were deliberately omitted from the disclaimer and **no disclaimer was filed or intended to be filed as to them.**

It is our contention that since the disclaimer merely related to certain claims other than product claims 28, 30 and 31 in suit, **the disclaimer could not legitimately have any effect on said product claims 28, 30 and 31,** which were omitted from the disclaimer and as to which product claims no disclaimer was filed.

This contention is supported by Robinson on Patents, Vol. 2, Sec. 650, page 289, where it is stated that:

> "The disclaimer of a void claim does not affect such other claims of the patent as by themselves are valid."

In a number of cases the Courts have held in effect that a disclaimer with respect to one claim does not affect the scope of another claim not mentioned in the disclaimer. Graham vs. Earl, 92 Fed., 155, 158; 34 C. C. A., 267 (9th C. C. A.); United States M. P. Co. vs. Hewitt Co., 236 Fed., 739, 742; 150 C. C. A., 71 (7th C. C. A.); Permutit Co. vs. Harvey Co., 279 Fed., 713, 721 (2nd C. C. A.).

The decision of the 6th C. C. A. below is, we submit, therefore, correct in holding that (Rec., p. 659)

"The absence of any effect upon product claims resulting from a disclaimer which narrows method claims in the same patent, clearly follows from their mutual independence; there is no reason why there should be any such effect."

Such mutual independence was clearly pointed out by this court in Rubber Co. vs. Goodyear, 76 U. S., 788; 19 L. Ed., 566.

As to the second question, i. e., **as to whether the prior art required that these process details be read into these broad product claims,** in order to save them from invalidity, we submit there is no rule of law permitting the claims to be so changed. **If the glue is old** as defined by these claims, then **the claims are invalid. If the glue is new** and is not found in the prior art, then **the claims are valid** and there is no sound basis for holding the claims limited to the two step process. **This Court in McCarty vs. Lehigh Valley R. R. Co., 160 U. S., 110, 116; 40 Law Ed., 358, 361, held that an element cannot be read into a claim to save it from invalidity** or to make out a case of novelty or infringement.

As we see it, the decisions of the 2nd and 7th C. C. A., are in direct conflict with the law as laid down by this Court in McCarty vs. Lehigh, supra.

As to the third question respecting plaintiff's failure to appeal from Judge Sanborn's final decree, we need only point out, that said decree held the product claims here in suit **valid and infringed.** Plaintiff could not appeal from that holding in its favor no matter what Judge Sanborn's reasoning might have been. No appeal lies from a court's opinion or reasoning. Evans vs. Suess Co., 83 Fed., 706, 709; 28 C. C. A., 24 (7th C. C. A.).

We believe the 2nd C. C. A. in the Standard case and the 7th C. C. A. in the Gould, et al., cases reached the astounding result of non-infringement because **they did not under-**

stand the invention and the prior art, and the numerous questions which arose in the prior litigation.

Defendants' counsel (in those cases which held non-infringement) selected various statements from the prior decisions and from plaintiff's briefs and arguments in those prior cases, and used such statements wholly disassociated and isolated from the surrounding facts and circumstances in those cases respectively, thus giving to such statements a meaning and significance which we submit was never intended by those who made the statements. Thus statements which were made in the early cases with respect to process claims and glue base claims there in issue, defendants' counsel have treated as though applying to the product claims here in issue. Defendants' counsel have carried out this scheme of confusion in such a clever manner, that to anyone who does not master the details of the prior art, the history of the prior litigation and the facts and circumstances surrounding the same, the argument built up around such isolated statements will sound quite plausible and convincing, but, we submit, it will only appear so to one who has not a full and clear understanding of the prior art and of the facts surrounding the prior litigation. We, therefore, most earnestly request and urge this Court to bear with us in a quite full discussion of the patent, the prior art and the previous Court opinions. Our review of such facts and circumstances extends to page 122 herein. Our argument is embraced in pages 122 to 176, but we believe the argument cannot be fully understood without a careful study of this review.

DETAILED REVIEW OF FACTS.

Starch and the Meaning of Viscosity, Degeneration and Water Absorptiveness.

Starch is a carbohydrate, a complicated compound of carbon, hydrogen and oxygen of the formula $(C_6H_{10}O_5)n$

where n is four or more. Starch comes in the form of minute grains. Each starch grain is composed of an outer coating or cell-wall of very complex structure—called starch cellulose while the cell content which is less but still complex in structure is called granulose. Each starch grain is made up of many millions of molecules of varying complexity. Starches obtained from corn, wheat, rice, sago, potato, cassava, etc., vary and starches from the same kind of plants also vary considerably as to physical characteristics and properties. Cassava starch, such as referred to in the patent and used by defendant and Perkins, comes from Java where it is obtained from the cassava roots and purified for market.

Viscosity: Webster defines "viscosity" as "the quality or state of being viscous" and he defines "viscous" as "adhesive or sticky and having a ropy or glutinous consistency."

Ordinary starch is a dry powder. When we speak of the viscosity of starch, we mean the viscosity of a solution of starch. When testing the viscosities of different starches for comparison, a standard method of solution with the same proportions must be adopted. Different chemists use different methods which are not directly comparable.

Difference in viscosity of starches is supposed to be due, to the difference in the size or complexity of the starch molecules, the larger or more complex molecules producing greater friction and, therefore, greater viscosity in the solution.

Degeneration of the starch is supposed to change it by splitting up the larger molecules (not the starch grains) into smaller molecules, so that it produces less viscous solutions when dissolved in the same proportions in the same way. Degeneration of starch may be accomplished by a limited action of acids, alkalis and certain other chemicals thereon; also by bacterial action and fermentation, and it is believed that differences in the cultivation of the plant result in the production therefrom of starches degenerated to different degrees and therefore having different viscosities.

Water-absorptiveness as used in the patent means that different starches when dissolved in the same way require different amounts of water to produce a solution of the same viscosity.

The terms "water-absorptiveness," "viscosity" and "degeneration" are therefore used more or less interchangeably. A starch which is relatively little degenerated is one of relatively high viscosity or high water-absorptiveness, while a more degenerated starch is one of lower viscosity and less water-absorptiveness.

When starch as it comes from the plant is treated with small amounts of certain chemicals it is gradually degenerated. If the treatment be sufficiently continued the starch goes through a considerable range of decreasing viscosity until it reaches what is called "soluble starch" which the patent says is unsuitable for making veneer glue. If the treatment be further continued dextrine is obtained which is used for common mucilage and the backing of postage stamps and the like. Further treatment may result in the production of glucose, one of the sugars. Both dextrine and glucose are unsuited for making veneer glue.

The viscosity of Perkins and defendants' glue is quite different from the viscosity of the starches from which they are made as ordinarily tested because they are ordinarily tested with different proportions of water and under different conditions than when the veneer glue is made therefrom.

The Requirements of a Glue for the Wood Panel or Furniture Veneer Industry.

The gluing together of wood layers is quite a different proposition from the sticking together of pieces of paper and the like for the wood is far more porous than the paper. For the successful gluing of wood as in furniture veneering, the glue must penetrate the wood far enough to obtain a firm rootage in the pores of the wood but not so much as to

be substantially all absorbed in the wood, leaving insufficient glue between the layers to make a strong joint between the wood layers. If on the other hand the glue is too stiff or gelatinous it will not penetrate the wood pores sufficiently to become firmly attached thereto.

The requirements of a glue for the furniture veneer industry are well exemplified by a good quality hide (animal) glue. It was the standard. Any glue to be useful in this art must measure up fully to this standard and must have the necessary qualities of this animal glue.

In furniture veneering where wood layers are glued together to make built-up panels, etc., the glue is spread onto the wood layers by large spreading machines having rolls which dip into glue troughs and transfer a layer of glue therefrom to wood sheets which are fed between the rolls. The wood sheets are then placed together and held under pressure until the glue has set sufficiently.

The glue must be substantially homogeneous and not contain suspended matter which would clog up the pores in the wood (as is the case with certain prior art adhesives used for sticking paper and the like) and thus prevent the glue from taking a firm rootage in the wood layers.

The glue, in commercial operations, is mixed in large mechanically agitated kettles from which it flows through pipes to the spreading machines. Therefore, the glue must be capable of being mixed by stirring so as to become homogeneous and sufficiently fluid to flow through the pipes. It must not quickly stiffen or gelatinize so as to clog up the pipes or prevent the glue from taking a firm rootage in the wood. *The glue must have low water content comparable with that used with animal glue in this industry (about 3 parts or less of water to one of glue base) because too much water not only delays drying and warps the wood but leaves too little actual binding material in the joint.* The glue must not be too hygroscopic when dry. If it absorbs too much moisture from the air it makes the joint weak and the furniture would likely come apart in damp weather. It also must

not dry out so much, when exposed to high temperatures that it becomes brittle and breaks up. This would weaken the joints placed near radiators and the like. The glue in the joint must have elasticity so as to be capable of bending as the wood bends under various atmospheric conditions and hard usage. The actual **tensile strength** must be high. It **must be much greater than the lateral strength of the wood** itself (which is around 800 to 1,000 pounds per square inch) in order to provide an ample margin of safety.

These essential qualities of a furniture veneering glue and the machinery used to handle the glue, are discussed by Dr. Grosvenor (Rec., 113-120).

Perkins' Early Work at Poplar Bluff.

In 1904 Mr. Perkins was raising cassava starch in Florida, and he or his company, the Planter's Manufacturing Company, had a plant at Lake Mary, Florida, at which they were degenerating starch with various reagents and to various degrees for the purpose of making sizing starch for cotton goods, paper, carpet cops and cordage, and also for the purpose of making paper-box adhesives and laundry starch (Rec., 737, 738, 746). The business was not successful, and in 1905, Mr. Perkins and his company were heavily in debt and in very urgent need of ready money to carry on the business. Mr. Perkins obtained the sympathy and interest of a Mr. Palmer who was then at the head of a plant at Poplar Bluff, Mo., which was manufacturing veneered sugar barrel heads, and Mr. Perkins pursuaded him to try these degenerated starches to make an adhesive for gluing together these barrel head layers at Poplar Bluff, and succeeded in getting Mr. Palmer to take large quantities of the starch, which had been hypothecated with banks (Rec., 743, 744, 745).

Mr. Perkins at that time had no conception of the invention of the claims in suit. He was manufacturing sizing, paper-box adhesives and laundry starch. Failing to profita-

bly market these and learning of the use of casein glue at Poplar Bluff, he apparently decided to see if his starches could not be used for this purpose. He was very persuasive, for he succeeded in getting the Poplar Bluff people to take more than they needed even before the adhesive had been given any practical trial on the wood barrel heads.

The Poplar Bluff concern is the only one in the country making barrel heads by gluing together the wood layers. **This gluing up of barrel heads is radically different in its requirements from regular veneering. No such strong adhesive or joint is required** (Rec., 718, 729, 740). It is only required to hold the head together until the barrel reaches its destination (Rec., 718).

With this easy proposition, Mr. Perkins made a few small tests in the latter part of February, 1905, at Poplar Bluff, and without trying its spreadability and flowing qualities, in any proper way, succeeded in securing a year's contract the first of March, 1905. Just how he mixed up and dissolved his starch in these small preliminary tests, or how far the starch was degenerated, nobody knows. But it is perfectly clear that when he later began to try his starch adhesives on a large scale, he encountered all kinds of trouble, which did not cease until long after 1906.

The first test of the glue (not the glue of the patent in suit) about April, 1905, was unsuccessful. The glue would not flow through the pipe to the spreader and it was so heavy it broke the agitators (Rec., 681) and they had so much trouble with it that they went back to using the old casein glue again (Rec., 680).

This failure occurred after about 135,000 pounds of Perkins' starch had been shipped to the Poplar Bluff plant. The Poplar Bluff concern having bought so much of this starch material, and Mr. Perkins of course desiring to make it work, if possible, he continued experimenting. To overcome the trouble of agitators breaking, new agitators and shafting were provided, but then they still found the mixture too heavy to flow through the pipes, and Mr. Perkins

had to change the formula for mixing it and add more water, and this was found to be very bad for the sticking qualities and setting qualities of the adhesive and Mr. Perkins ordered some different kind of "glue," and they were always making changes to make the "glue" flow through the pipes. The various mixtures would not set quick enough in the retainers, and other changes were made (Rec., 681).

Mr. Perkins evidently succeeded in getting some fairly promising results about May, 1905, as in June, July and August, 1905, three more shipments of starch material were made to the Poplar Bluff concern (see invoices, Rec., 1005-1008), but we find that after the August shipment, no further starch material was sent until June 4, 1907, two years later (Rec., 738, 1008). They continued trying the so-called Perkins glue until August, 1905, when the glue plant was shut down until November 13, 1905. The plant was also shut down from August, 1906, until May, 1907 (Rec., 914).

This starch adhesive (dry starch base), came in bags marked L and in bags marked H, signifying light and heavy (Rec., 682). With four parts of water, the light would mix too thin and heavy too thick, so they tried mixing them together. They then found the glue was frequently sloppy and it would not set properly, so they would change the proportion, but finally decided on **4 parts** of water (Rec., 683, 684). The starch was dissolved in the water with 7 per cent. of caustic soda. When using this caustic it so affected the hands of the men that great trouble was experienced until they finally got gloves for the men's hands (Rec., 684).

Mr. Perkins was continually coming back to the Poplar Bluff to try and remedy troubles and make the glue work satisfactorily (Rec., 686, 690). It was impossible to tell whether the glue was satisfactory until the glued up heads were taken out of the retainers (presses) and it would then likely show up bad and spoil a carload of stock before one knew it. One batch would seem all right and the next one wouldn't, but the foreman had been instructed

to use the glue and was doing the best he could (Rec., 686, 687). It seemed they were never able to get it properly proportioned and the foreman was disgusted with it. This was apparently after 1906. The foreman Baker testified that "a heap of times they would never know anything about the stock being glued up bad until they would get a report on it from New York" where the heads were sent (Rec., 687). As late as December 30, 1906, Mr. Perkins was having trouble with his mixtures (Rec., 689), and Mr. Perkins had gotten up a new form of spreader and they were trying a new and different formula as late as February, 1907 (Rec., 689).

The starches which were used in this early work at Poplar Bluff varied greatly. They were, however, in the commercial work, always dissolved in **4 parts of water** in making the adhesive, **and resulted only in such weak adhesives and objectionable in other respects that it was only with the greatest difficulty and continued experimentation that the adhesive was used for gluing up these barrel heads. The adhesive did not have the critically small amount of water (about 3 parts or less) nor the adhesiveness and other necessary qualities of animal glue** required in regular furniture veneering. The 7th C. C. A. in the Solva Case so held (See p. 162, *infra*). Mr. Perkins had tried to use less water, but the mixture was so heavy it would not flow through the pipes, so that they had to use more water (Rec., 681) and it appears that even with 4 parts of water, the batches were oftentimes too thick (Rec., 775). It may well be that some of the starches which were used at Poplar Bluff were capable of making the good as animal glue of the patent, if they had been suitably dissolved in 3 parts or less of water with the solvent. But neither Mr. Perkins nor anyone else at that time knew this or how to obtain such a glue. *It was not known that such a starch glue was possible.*

That what was done at Poplar Bluff in 1905-1906 did not embody the invention in controversy is shown by the fact that during and after this period, Mr. Perkins tried to use starch adhesive in regular veneer factories and either com-

pletely failed or else did not succeed until long after November 2, 1906.

We will briefly consider each of these failures chronologically.

Perkins' Failure at Cairo in 1905.

Some tests were made at Cairo in 1905 and some panels built up. The people told Mr. Perkins they would consider the matter some time later, and it was more than a year later before they again took up the matter (Rec., 771), so that no use of the glue was made at Cairo in 1905 other than a small test. When they again took up the matter at Cairo in 1906, they had trouble (Rec., 688, 689). The requirements at Cairo on sewing machine table tops made it necessary to take precautions that were not necessary at Poplar Bluff (Rec., 691). A much stronger joint was required at Cairo for table tops than at Poplar Bluff for sugar barrel heads.

Perkins' Failure at Wilts.

There are some scattered references in the testimony of defendants' witnesses regarding Mr. Perkins trying out vegetable adhesive at the plant of the Wilts Veneer Company, Plymouth, N. C. This was in the latter part of 1905 (see Letter No. 65, Rec., 953), or the winter of 1905-1906. Some of the material shipped there by Mr. Perkins was raw starch and some was treated starch (Rec., 780). Mr. Perkins went there, off and on, for a short time, but he had to take back a large quantity of the material he had shipped them and pay them something like $2,000 for the goods he took back. It would not make a strong joint. It was not even strong enough for the joints these people were using in the making of box shooks, also an inferior class of work (Rec., 772).

Perkins' Failure at Frost's in 1906.

Mr. Perkins tried out starch as an adhesive at the Frost Veneering Seating Co., Jersey City, N. J., in the early part

of 1906, and the result was that Mr. Frost was not satisfied with the work turned out with Mr. Perkins' adhesive and Mr. Perkins removed all his apparatus and material from the Frost plant (Rec., 740). Mr. George L. Frost, of this company, says they gave Mr. Perkins carte blanche at the Jersey City factory and Mr. Perkins shipped his machinery and glue base there and he glued up several panels used for parts of furniture for interior decoration. Mr. Perkins, however, was unable to prove that his glue was satisfactory for this work. It was wholly unsatisfactory principally because it would not hold—the veneer could be easily torn apart, and the Frost Company went back to using hide (animal) glue (Rec., 785-788).

Perkins' Failure at First at the Singer Company's Plant, South Bend, Indiana, 1906.

Mr. Perkins came to the Singer Company plant at South Bend, to test and try out a starch glue in the fall of 1906. He encountered troubles there and had to stay until the fall of 1907, Mr. Wenrick helping practically all the time to try and get a mixture that would work (Rec., 781).

These troubles were of all sorts; trying to get a mixture that would flow so they could spread it and at the same time get the set and strength. Sometimes the mixture would become short and not remain fluent. Other times it would separate and become watery. They also experienced trouble with the mixture not setting and the glue in the joint not drying, so as to form a sufficiently strong joint. The joints would be damp inside, i. e., they had trouble with soaked joints. They experienced conditions of this kind, until at last Mr. Perkins reached a solution of the problem by mixing in certain proportions a starch base, water and caustic, which gave a mixture fluent enough to be properly spreadable and workable and which gave the strength and set they needed for such a wood joint as they were trying to make, i. e., veneers for sewing machine tops. But **Mr. Perkins did not get these results until about September, 1907** (Rec., 781, 782).

In the meantime Mr. Perkins was trying all sorts of things. He had tried many different percentages of caustic and water with and without heat. The glues which Mr. Perkins tried in the early part of 1907 at the Singer plant could not satisfactorily do the work required on the sewing machine veneers (Rec., 782, 783).

Mr. Stryker who was helping Mr. Perkins, confirms Mr. Wenrick, that Mr. Perkins was unable to make a glue satisfactory for joining regular veneers, until well into 1907, and tells of the difficulties encountered (Rec., 741-743). On one occasion he was so discouraged he resigned. He was disgusted with the proposition of trying to make wood glue from starch and get it into successful use, but later decided to go on a little longer (Rec., 772).

What was done at Poplar Bluff was not the invention of the claims in suit, but something quite different. It may have indicated progress along the road but it had failed to reach the goal. The Poplar Bluff adhesive was no more than a good paper mucilage or paste. Mr. Perkins' attempts at Cairo, Wilts and Frost's were failures and his eventually successful work at the Singer Co. plant in South Bend was too late (1907) to serve as a two-year public use prior to application for patent in 1908.

The Specification of the Patent in Suit.

Since defendants' counsel have contended that the specification of the patent shows that the whole invention is limited to the two step process, or to a particular base used in the process (which contention we controvert), we will consider the specification in some detail (the patent is found at p. 247 of the Record).

It was while Mr. Perkins was experimenting at the Singer Co. plant in South Bend that **he first discovered a vegetable glue comprising starch dissolved with caustic in about 3 parts or less by weight of water** (instead of 4 parts as at Poplar Bluff) **which glue had the adhesiveness of animal**

glue for furniture veneering and the necessary properties of animal glue for that art, in that it was viscous yet semi-fluid, spread properly with the machines, and had the necessary quick drying and setting qualities and made a permanent joint like animal glue.

This was Perkins' *product* invention, i. e., the *product* invention here in suit. This product defendant makes. This product the 6th C. C. A. below has held to be infringing. This product the 2nd C. C. A. and 7th C. C. A. held non-infringing.

Perkins also claimed in his patent certain *process* features. We hesitate to discuss these process features because a mere discussion of them tends to lead one to believe that the invention in controversy depends on the process, whereas the patent covers a plurality of inventions or inventive ideas; the product, and also the process, covered by separate claims.

The patent (Rec., p. 247) states that the "invention relates to *improvements* in glue and *method of making the same*" and particularly "from carbohydrates containing amylo-cellulose," i. e., from starch. The patentee thus made it clear that he not only claimed the new glue as a product but also his process of making it as a separate invention.

After referring to the ordinary starch paste such as used for wall paper and the like, the patent states (p. 1, line 26):

> "Such pastes have not the necessary relative 'tack' *viscosity, cohesiveness and tenacity to spread and adhere properly when applied as wood glues.* Such pastes in cooling also become extremely thick and jelly-like and are practically *unsatisfactory for woodwork* when originally made with water, or diluted after cooking, because *water warps the wood and delays drying* and the pastes do not set hard enough and are not dense and elastic enough when dry. If more water is added in an attempt to make it more *fluid,* the paste becomes so weak and diluted that it has practically no power and would be wholly unfit for most classes of work, especially *wood joints,*"

and the patentee therefore states that it is his object to produce a glue (p. 1, line 45)

> "which will not have the disadvantages just pointed out, but which will be exceptionally tenacious and powerful but still *amply* fluid for easy application."

The patent points out that the final glue product of the patent is one adapted for *wood* joint work and parallels *animal glue* in respect of *water contents, adhesiveness* and *other properties* (p. 4, lines 92-108), and the patent further says (p. 1, line 51) that it is the object of the invention to produce a starch glue which may be practically used for the same purposes as the best animal glue.

The law requires that every applicant for a patent for a new product or composition of matter shall describe in his specification at least one way of making it. There may be a great many ways of making it but the applicant must describe at least one method. And he may also claim his process of making it or he may claim only the product itself. To fulfill the requirements, Perkins described in his patent in very great detail a method or process by which his starch wood glue could be made and he says (p. 1, line 68):

> "To do this I first take a carbohydrate of the proper kind, and treat it with a reagent to decrease its water absorptive properties in the sense that to render fluid the finished glue, comparatively little water will have to be added and the final glue will not thereby become *seriously diluted.* The reagent I use I call a starch converting agent because it is believed it exercises, at least in part, a hydrolyzing or oxidizing or converting action similar to that of the well known starch converting agents, many of which have been used to convert starch into soluble starch and dextrine. I may use any suitable starch converting agent but the action I produce is preferably much less complete since it is not my object to convert the starch wholly but only to effect its physical properties when put into solution or dissolved

to form glue. The effect of this treatment is also that it *decreases the viscosity of the glue produced with a given amount of water without detriment to its 'tack,' quick adhesive properties and cohesion.*"

In other words, according to Perkins' *preferred process,* he produces a reduction in viscosity in the starch *before* he dissolves the starch with the water and caustic to make the final glue, and this step of preparing a converted or degenerated starch base has been termed his preliminary degeneration treatment or *first step.*

Then, at lines 18 to 88, page 2, the patent describes in great detail a method of preparing the *base* by degenerating the starch with acid, care being taken not to convert or degenerate the starch too far to soluble starch or dextrine. This treatment to reduce the viscosity of the starch is carried out by treating the starch with a weak acid solution, and when the viscosity has been reduced to the desired degree the acid is neutralized and the starch drained and dried, and the patent then states (p. 2, line 89):

"In commercial use I preferably ship the dry material, obtained as above, to the consumer who carries out the second part of the process at the place where the glue is to be used, but if *desired the first and second parts of my improved process may be carried out together.*"

Then the patent, still describing this *preferred process,* says (p. 2, line 96):

"In carrying out the remaining steps in the preparation of my improved glue, the dried base, obtained as above, is mixed with *about three parts or less* by weight (of dried base) *of water* according to the strength of the joint and economy desired. The dried base does not materially go into solution in the water unless heat is applied, but a liquid suspension is thereby formed which is agitated and treated with a solvent of cellulose, as for example, an aqueous solution of caustic soda or potash alkaline to phenol-phthalein, using if cold from

six to ten per cent. of the weight of the dry base, of caustic soda or its equivalent of caustic potash. The alkali, I believe, acts chemically to unite with one or more starch molecules and with the water to form a colloidal compound. The alkali is best added in the form of a solution of from 33% to 50% strength. Sodium and potassium hydrates are the most available and among the most powerful of the known solvents of the starch cellulose and are well adapted for most purposes."

The patent then gives a specific example (beginning at line 121, p. 2) using 100 pounds of the starch base, 225 pounds of water, and 10 pounds of caustic soda in the form of solution, the caustic being added slowly, during 15 to 20 minutes with constant stirring. When following this preferred method, the patent describes the appearances of the mixture, beginning at line 10, page 3.

When all the caustic soda solution is added, the batch is completely converted into the final good as animal glue ready for use.

The patent explains (p. 3, line 42):

> "The word 'compound' is here used in the more modern chemical sense of matter connected within the limits of some quantitative relation to produce a *definitely recognizable product having certain definite physical characteristics.*"

The patent next points out, in lines 48-59, page 3, that heat may be used and (p. 3, line 105) that:

> "The action of heat replaces the action of a portion of the caustic in transforming the glue base" into glue.

The heat should be carefully regulated, as noted in lines 103 to 105, page 3. Defendant uses such heat and, thereby, reduces the amount of caustic from between 6% and 10% down to about 3%.

The patent further says (p. 3, line 60):

"As previously stated, when *ordinary* starch is heated with water, it absorbs enormous quantities of water, and if only two or three parts of water are used becomes of a stiff jelly-like form which must be very much diluted before it will be practically workable. I find, however, that using my improved glue base and method of mixing the same, this water absorbing power can be greatly reduced and can be regulated, although the mixing is done with the same proportion of alkali and carbohydrate or else the same temperature, which have hitherto produced unworkable jellies or weakly adhesive pastes or mucilages."

What is meant by "ordinary starch" is, of course, the ordinary or general run of starch on the market **at the time the application** was filed, not the ordinary cassava starch of today. The testimony shows (Rec., 41, 42) that the so-called raw cassava starches as they come on the market have greatly decreased in viscosity during recent years. Starches which Mr. Perkins then found unworkable in three parts or less of water with the machinery then available are now quite workable because of this decrease in viscosity (degeneration) and the improved machinery which is now available. With improved double-acting agitators in the mixing kettles, it is now possible to handle starches in three parts of water which are higher in viscosity than the preferred degenerated base of Perkins. And by being able to so handle them, *it is possible now to produce a substantial reduction of viscosity in the second or dissolving step* of making the glue, so that the end product, the final viscous, semi-flued glue, is the same identical substance as that described in the Perkins' patent. **This is what defendants do.**

That the patentee contemplated that the glue might be made in this way is evidenced by the statement in the patent (p. 3, line 78):

> **"Thus, by proper adjustment of conditions of mixing I am able to produce this glue even with certain grades of untreated cassava carbohydrate and with other starches and conversion products (starchy carbohydrates)."**

In other words, while he prefers to first degenerate or convert the starch before dissolving it to make the glue because it is then easier to handle in the mixing machinery, it was pointed out that, even at that time, "certain grades of untreated cassava" could be used "to produce this glue" "by proper adjustment of conditions of mixing."

As Dr. Grosvenor testified (Rec., 130)

> "at the time of Perkins' application there were various starches on the market that required no preliminary treatment, in spite of that, it is nevertheless true that many of them did require treatment and they did not run particularly uniform. It was preferable, therefore, as pointed out, to use starches of high viscosity and degenerate them. In recent years the supply of starches on the market, the water absorptive properties of which are already reduced, is very much greater; they are more plentiful, and they are being marketed in far more uniform condition; therefore the necessity for preliminary treatment has, to a very great extent, disappeared."

The patent further says (p. 3, line 90):

> "In the second part of my improved process, less than **about three parts of water** by weight to one part of the dry material are used and after adding the solvent it is found that even with such a small amount of water, the batch will assume a *semi fluid* consistency much superior to that ordinarily obtained by the use of water alone and will not become jelly-like and tough as in former processes."

It is noted that the patent does not here describe the glue as "fluid," but as "*semi-fluid*" and it is elsewhere also described in the patent as being viscous. The patent does not describe the glue as a thin glue.

The So-Called Tests for the Base.

Reverting to Perkins' **preferred** process the patent describes a degeneration first step treatment with sulphuric acid, although it says other equivalent chemicals may be used. Following the description of that specific degeneration step it says (p. 3, line 121):

"One way which has been found quite satisfactory for determining when the action of the *acid or its equivalent*, and the agitation, have been carried far enough in the first step, is as follows:"

Then follows a detail description of a **9 to 1 boil up viscosity test** and the Perkins' viscosimeter to be used therewith (p. 3, line 127, to p. 4, line 34). The patentee does not give this as a universal test of his invention, but merely as *"one way"* which he found "quite satisfactory for determining when the action of the *acid or its equivalent"* has been "carried *far enough* in the first step." The test was obviously intended to be applied only to a *base* degenerated by the sulphuric acid or its equivalent, and then only to determine when the degeneration had been carried "far enough." It was not a limiting test of anything, but only a "quite satisfactory" test indicative of his preferred base. It can certainly have no bearing on the scope of the *finished glue product invention.*

The patent says (p. 4, line 40):

"When treated in accordance with my process, I find that the carbohydrate glue **base may be formed into glue by using only from one to three parts of water,** the more water used the greater the delay in drying."

Defendants' glue base is formed into glue by using only from one to three parts of water.

Then, as a further guide-post to enable the novice to readily reach the desired result, but, again, not as any limiting test, the patent says (p. 4, line 74):

"Also, in actual practice I have found that a good glue is produced by treating the base with the chemicals to reduce the water absorbing power to a point where the base if mixed with from 2 to 3 parts of water and subjected to heat of 170° F. would result in a syrupy condition instead of a thick jelly-like mass."

This is an alternative test for the 9 to 1 boil up test and like the latter it is merely indicative of his preferred base.

Even within this now disclaimed and so irrelevant field the fact that two different tests are given for the same determination shows that neither is a limiting test in the sense of the patent law. They are merely examples of Perkins' **preferred method** of reaching the veneering glue. They are not examples or tests of the glue. It is physically impossible to apply them to the glue product. Neither of these tests state that if the base is not so far degenerated it will not make the glue. The limiting test, and **the only limiting test in the sense of the patent law is the test given by the claims in issue, i. e., does the glue have the characteristics recited in those claims?**

With this **defendants' expert** is in agreement for he says (Rec., 178):

> "Both of these tests I judge are intended to describe certain characteristics of the Perkins base [and] not to be understood as injunctions as to methods of use. He is describing what his product will do, but is not suggesting that you apply that method to it if you are going to use it commercially. At the other points where he suggests the solution in caustic alkali he is telling you how he wants to use it commercially. **His fundamental and final determining test is apparently the fact that it forms a glue with one to three parts of water.**"

The patent speaks of the importance of low water content, saying (p. 4, line 85):

> "Practically all the water must be later removed that goes into the glue solution and is applied to the joints, hence an increase of water in the glue solution involves changes in drying methods, or in drying time, or in risks of injury to the material due to warping by the extra water, all of very serious consequence."

The small amount of water (1 to 3 parts) is characteristic. Any material increase in water can not be tolerated in the veneer industry for the various reasons pointed out.

Perkins glue does not vary in the same manner and is not subject to the same causes of deterioration as hide glue. The glue does not require hot plates nor a carefully regulated temperature during application like animal glue.

At page 4, lines 114-122, the new glue is described as

> "transparent and free from odor, and is very stable after mixing for use, it is instantly adhesive to clean surfaces, *its cohesion is very great* but not sufficient to overcome its adhesion and its viscosity is lasting and low enough to permit ready application, but so proportioned to its cohesion that *it is capable of being applied by machinery like hide glue* * * *."

The application of animal glue by *machinery* was characteristic of the *furniture veneering* art.

The Practical Tests for Veneer Glue.

To determine whether any starch glue has substantially the properties of animal glue for veneering the best and probably only satisfactory test is to try it out on a commercial scale in a furniture veneer gluing factory. No laboratory test seems to be sufficient to prove that such a glue can be used as a substitute for animal glue in furniture veneering. There are some tests, however, which may indicate that the glue is not suitable. For example the glue may be applied by hand to two blocks of wood and these stuck together and the number of pounds per square inch required to pull the blocks apart may be ascertained. The glue should test materially over 1,000 pounds per square inch. If it does not, it does not measure up to the regular grades of animal veneer glue. Dried film of the glue may also be tested for tensile strength (Rec., 132, 133). These tests, however, do not determine the permanence of joint, nor the spreadability, penetration, contractility, etc., in commercial operation and since all of these affect the strength of resulting joint between the wood layers the only satisfactory test is a test of the glue in commercial operation (Rec., 136).

The testimony shows that the Perkins glue will produce test block joints requiring **1,500 pounds and upwards** per

square inch to break them, whereas with good grades of animal veneer glue the strength varies from 1,300 to around 2,200 pounds per square inch. The cohesive strength of a dried film of Perkins' glue runs around 8,000 pounds per square inch, amply in excess of anything that is likely to be required for a wood joint (Rec., 132, 133).

The patent was granted March 19, 1912, and reissued as No. 13,436, July 2, 1912. In reissuing the patent no change was made in the claims. The main reason for reissuing the patent was this. The patent as originally issued stated that in carrying out the *process* in the preferred form the base could be degenerated to a point where it showed a viscosity between that of water and 3 times that of water on the so-called 9 to 1 boil-up test, and it turned out that this was meaningless unless the nature of viscosimeter used was known. Therefore, the patent was reissued to include a description of the particular viscosimeter to be used to obtain this viscosity in the base. Again, this has merely to do with the process of making the preferred base and has no bearing on the scope of the final glue product invention.

The *final glue product* invention was claimed independently of the two step process and irrespective of the condition of the starch base from which it was made, for the patent **claims it broadly** and also states, as specified above, that **the final glue may be made directly from untreated starch and without using the first step of the process.**

The Prior Art.

We will now discuss what we believe are the only important prior art patents and publications.

The Gerson & Sachse German Patent 167,275 (Rec., 275) and Virneisel French Patent 337,001.

Both patents describe the same process and product. The process consists in taking raw potato starch and treating it

with a given quantity of alkaline chemicals in water for a given time to degenerate the starch after which the starch is dried and sold for a sizing base. The *base* is the particular product of the patent, but it is stated that it may be dissolved in 20 parts of water or in 20 parts of a 2% caustic soda solution (Rec., 278), and so dissolved it is a typical **sizing** glue for the sizing industry.

It was the belief of plaintiff in the Solva case that the base produced by the process of this patent (when using regular German potato starch as starting material) differed somewhat from the preferred form of Perkins' base. The defendants in the Solva case argued that it was the same as the Perkins base, and invalidated the claim 24 for the glue base as a product. They also contended that the degeneration or first step treatment described by Gerson & Sachse invalidated the first step process claim 16. It will also be noted that Gerson & Sachse described a two step process in which starch is first treated with chemicals to degenerate it and then it is dissolved by a second step in water with caustic to make an adhesive (size). Defendants contended this was the substance of the two step process claims of the patent. But the only directions which Gerson & Sachse give for dissolving the base, are as follows (Rec., 278):

> "The vegetable glue in the dry form (the glue base) possesses the appearance of natural starch • • • yields when dissolved even in the proportion of 5 to 100 in water or in 2% caustic solution, a thick mucilginous liquid which is neutral and free from ash." (Part in parenthesis ours.)

The object of Gerson & Sachse was to produce a vegetable sizing glue (i. e., a starch base) in dry form which would dissolve up similar to gum tragacanth for sizing and dressing textiles, and bearing this in mind, the proportions above stated are the typical proportions one would expect to use (Rec., 209, 210), and, of course, a glue having the characteristics of Perkins' glue was not developed or discovered.

That is, **Gerson & Sachse proposed to dissolve their base in 20 parts of water or 20 parts of 2% caustic solution, to one of starch base, whereas Perkins and defendants use about 3 parts or less of water and caustic.**

The Gerson & Sachse fluid mucilage or sizing when tested to determine its properties as a veneer glue, falls down completely. The strongest joints on the block test that could be obtained with it did not exceed 390 pounds per square inch, whereas over 800 to 1000 pounds is required and Perkins and defendants and animal glue for veneering give from 1500 to 2000 pounds and over per square inch. The films of the Gerson & Sachse adhesive curled badly and the "penetration was very excessive; unless extreme care was used no material would remain in the joint. The viscosity was prohibitively small for regular practical application. The technical product to which the patent is addressed, and which it discloses, is totally unfit for woodworking purposes" (Rec., 211).

The main difference between Gerson & Sachse and Perkins is the **proportion of water.** By reason of this difference Gerson & Sachse failed to disclose either the ultimate Perkins semi-fluid glue or any process of making it, and therefore, as we shall later more fully point out, the 7th C. C. A. in the Solva Case sustained the claims for the *final glue product.* In spite of this, defendants' expert proceeded to dissolve the Gerson & Sachse base in 2 and 1/10 parts of water and caustic instead of dissolving it in 20 parts of water or 20 parts of 2% caustic soda solution as Gerson & Sachse direct. In other words defendants' expert used Perkins' small amount of water, with the Gerson & Sachse base instead of dissolving it with 20 parts of water as Gerson & Sachse describe. The result is of course immaterial (Rec., 184).

We may assume the resulting glue (using 2 1/10 instead of 20 parts of water) was substantially the same as Perkins, or within the Perkins' range, and that it would produce breaking strengths on block joint tests comparable with

Perkins' glue and animal veneer glue. The fact that this socalled (but not truly called) Gerson & Sachse glue, was capable of commercial use on veneers at New Albany or produced excellent joint tests at Armour Institute is entirely irrelevant and immaterial. It was not Gerson & Sachse glue but was Perkins Glue (Rec., 212).

Defendant's expert added Perkins discoveries to those of Gerson & Sachse and Virneisel and used Perkins proportion and not those of Gerson & Sachse in order to attempt to demonstrate that such art contains everything Perkins discovered. Patents can not be anticipated in this manner. Ludwigs vs. Payson Mfg. Co., 206 Fed., 60, 64; 124 C. C. A., 194 (7th C. C. A.); Johns-Pratt Co. vs. Snow, 212 Fed., 173, 176; Asperin Case, 171 Fed., 887, 889 (affirmed 179 Fed., 701).

We do not contest the point (decided in the Solva Case) that Gerson & Sachse disclosed a starch base equivalent to the Perkins base. Therefore the only important difference between Gerson & Sachse and Perkins is the proportion of water used. We contend that the critically small amount of water used by Perkins resulted in a new and patentable *product*, differentiated from the prior art by the fact that it contained only 3 or less parts of water and had the essential properties of animal veneering glue. If this *difference in amount of water with the resultant difference in product*, is ignored, then it would follow that the **whole Perkins process and his glue product is unpatentable and all of the claims of his patent are invalid**, and all of the Courts which have passed on the patent have erred in giving it any validity whatsoever.

This Gerson & Sachse patent was the prior patent which the defendants in the Solva Case stressed most and which the Courts in that case considered the closest prior art, and as we read their decisions they held that the product claims here in suit were not anticipated thereby, solely because of this difference in the amount of water which resulted in a *different kind of glue having different properties*, i. e., the essential properties of animal veneering glue.

Dorneman French Patent 232,781.

This patent is printed in the record at pages 385-387. The translation of this patent used in the prior litigation and introduced by defendants herein is printed in the record at pages 331-333. Defendants later introduced another translation printed in the Record at pages 388, 389.

The patent shows on its face that it relates to the sizing and finishing of textile fabrics, paper coating and the like, instead of the wood glue. The defendants have translated the title of the patent as "New industrial process for the manufacture of starch glues and their applications." The French word which they have translated as "glue" is the French word "colle." The word "colle" means glue only in the broad and general sense of an adhesive. It includes the thin weak sizing adhesives, pastes, etc. If Dornemann had intended to make a strong glue or wood glue or would have used the term "colle forte," which is used when one wants to distinguish the product as strong glue (Rec., 376, 377).

Dornemann says he takes potato, cassava or other starch, suspends it in water and adds either a chlorid or an alkali to bring out the agglutmant, i. e., make the final glue. He says (Rec., 388):

> "* * * according to the kind of fecula (starch) to be treated, but in *similar* ways and for the sake of obtaining the *same* above mentioned *result,* I use either a chlorid (preferably of calcium or magnesium) in the proportion of about 80 kilograms to 100 kg. of fecula, or an alkali (preferably caustic) potassium or sodium in a proportion of 20 to 30 kg. for every 100 kg. of fecula used." (Italics ours.)

Dornemann does not mention any specific amount of water, but the amount used he says must be such as will produce substantially the same result with the chlorid as with the caustic. Therefore, to determine the amount of water contemplated by Dorne-

mann, Dr. Grosvenor made tests to see what range of water quantities would give substantially identical results with chlorid and caustic as the reagents (Rec., 374, 375). He started out with five parts of water and, using the chlorid, obtained a very thick jelly which would not flow at all, something unfit for both sizing and wood joining. Then he tried the same proportion of water but with the caustic instead of the chlorid, and obtained a thin liquid. These two products were totally dissimilar. Dr. Grosvenor next tried twenty parts of water and found with that proportion that the two products came out substantially identical. Both were thin liquid sizes such as would be used in the sizing industry to finish and stiffen fabrics or to bind together the inert material in the coating of paper. It must, therefore, be concluded that Dornemann contemplated using well over five parts of water and approximately twenty parts of water, as was then common in the sizing and finishing art.

That Dornemann contemplated a liquid size is also shown by the fact that calcium or magnesium chlorid (which he alternatively uses) takes up water from the air (is hygroscopic), a quality useful and often required in cloth finishing (Rec., 375), but fatal in a wood glue.

Another part of the patent also shows that Dornemann only contemplated a thin liquid and relatively weak adhesive containing a large amount of water. He says (Rec., 389):

> "For certain applications, lastly, for which a glue having more body or consistence may be desired, I further expect to add, to the amount of 10 to 30 per cent., some inert substance, as barium sulphate, kaolin, sodium or potassium silicate, etc., which has no chemical action and does not alter the processes I have described for the manufacture of the glue (colle) itself."

In other words, his original adhesive is so thin that it is possible to add from 10 to 30 per cent. of such inert substance and still have a glue-like consistency. If it were already a heavy, viscous glue like defendants' or Perkins'

(i. e., 3 parts or less of water), there would be no need to add anything to give it more body or greater consistency, and **if such an amount of inert material were added it would be useless for any purpose.** However, by using in the neighborhood of twenty parts of water, it is quite possible to add this quantity of inert material and still obtain a good sizing product but something wholly useless for wood work (Rec., 375).

Dornemann further says that he prefers to construct his machinery so as to avoid "all throwing out" of the glue. A thin watery liquid would be likely to throw out, but the heavy viscous semi-fluid glues of Perkins and defendants could not throw out. It would be absurd to speak of them in that way. Dornemann, therefore, contemplated only a thin adhesive containing something like **twenty parts of water,** which would likely throw out (Rec., 376).

Dornemann also says his final glue (adhesive) is "allowed to stand—and occasionally skimmed if advisable." He contemplated allowing it to stand in order that dirt or the like may rise to the top and be skimmed off. If his adhesive was heavy like Perkins' and defendants' glues, nothing in it would rise or settle and it could not be skimmed in any event. This shows again that Dornemann contemplated only such a large proportion of water as would produce such a thin adhesive that dirt or the like could rise therein and be skimmed off (Rec., 376). He says his product

> "may be used under the same conditions as all known adhesives, glues and sizes, producing much more energetic and durable effects."

By the word "glues" ("colles") he obviously means finishing and paper coating or like glues or adhesives. As we have seen, his whole specification is addressed to that art and not to the wood gluing art.

Defendants' expert, Dr. Walker, says that with Dornemann "any type of starch can be used" and Dornemann **"does not state the amount of water"** but **allows** the oper-

ator to use that amount of water which gives the consistency of glue to satisfy the purpose for which it is intended (Rec., 381). On the theory that he is permitted to use with such starch, proportions **first suggested by Perkins,** Dr. Walker made up glue, being careful to use therewith only 3 parts of water (Rec., 381) and he calls this Dornemann glue. **This proportion Dr. Walker admits is not specified by Dornemann and is necessary in veneering.**

This glue which Dr. Walker made up and called Dornemann glue, he said he used to glue up some panels which were satisfactory (Rec., 381). Why shouldn't they be? It was not Dornemann sizing glue that he made. He adopted Perkins proportions and was using Perkins glue. Such procedure neither anticipates Perkins nor justifies defendants' acts (Ludwigs vs. Payson and The Aspirin Case, supra).

If, as contended by defendant, the Dornemann patent discloses a starch glue with 3 parts or less of water and having the essential properties of animal veneering glue, like defendants' glue and as claimed in the product claims in suit, then, **in that event, the product claims in suit are invalid,** and all the Courts. which have considered the patent, have erred in holding them valid. And if the Court can find that the Dornemann patent, or any other prior art, sufficiently discloses such product, we believe it to be the duty of the Court to declare the product claims in suit, invalid.

Higgins U. S. Patent 579,827 (Record, 256) (and British 12,447 of 1896).

According to Higgins he takes from four to seven pounds of corn starch, and adds it to one gallon of acidulated water containing 7.87 per cent. (by weight) of sulphuric acid, mixed with about two per cent. of boracic acid, heated to a temperature preferably of about 145 degrees Fahrenheit before the starch is added, although that is not stated as

necessary. The starch is thoroughly mixed with this solution and the temperature raised more or less evenly, but rapidly to between 190 degrees Fahrenheit and 200 degrees Fahrenheit. The mixture is then held at that temperature for the desired time, as indicated by description of the qualities of the product in the patent, and it is neutralized partly with caustic soda and partly with ammonia, and allowed to cool, forming a "soft or firm paste."

Plaintiff's expert, Dr. Grosvenor, actually carried out the process many times (Rec., 212). The adhesive paste produced block joint strengths of only 500 to 600 pounds per square inch, about one-third of what Perkins and defendants' glue produce and less than half the required strength for veneer glue (Rec., 213).

Higgins heats to a high temperature with acid so that the starch is largely dextrinized and its strong adhesive properties destroyed, although it makes a good paste for paper, photo mounting, etc. (Rec., 214).

The Higgins patent appeared in 1897, 10 years before Perkins invention, and if Higgins disclosed how to make a veneer glue from starch, the veneer industry would not have waited all that time before using it.

Defendant's counsel admit (p. 13 of their Brief) that Higgins carried the conversion of the starch further than is contemplated by Perkins and produced only one of the "weaker adhesives," so that it seems unnecessary to further discuss the proofs with regard to the inadequacy of Higgins.

Brueder German Patent 114,978 (Rec., 295) (and U. S. 646,724).

According to Brueder starch is mixed with an equal weight of sodium hypochlorite solution, containing 2½ per cent. to 5 per cent. of hypochlorite. The mass is then stirred and left to itself for several (say 12) hours. The liquid is decanted and the residue dried between 50 and 100 degrees centigrade. Two to five parts of hot water

are then added to one of dried residue to make the adhesive.

In the preliminary treatment the starch is degenerated to what is termed **soluble** starch (Rec., 217). Soluble starch is one which has been degenerated almost to dextrin and so far that it has lost its tenacious adhesive qualities no matter what proportion of water is used with it.

Defendants' expert admits that by this process the starch base is far more degenerated than Perkins (Rec., 193). The product was never intended for use or usable as a veneer glue but only for sizing and similar uses where only a very weak adhesive is required (Rec., 215, 216). Dr. Grosvenor tried the process in various proportions within the limits given and obtained an average breaking strength on the block joint test of only 730 pounds per square inch less than half that of Perkins and defendants' veneer glue. The dried films of the Brueder adhesive were entirely too contractile, so much so that in some of block joint tests the blocks jumped apart without any pulling whatsoever (Rec., 216). The Brueder product is entirely different from the Perkins and defendants and useless for furniture veneer glue, because wholly insufficient in cohesive and adhesive strength combined, too contractile on drying, causing warping and twisting which tend to break up the joints (this is characteristic when an over-degenerated base is used), also because its penetration is so excessive and irregular that it would be impossible to use it under practical conditions, because its flow is uncertain, the material being apt to gelatinize and stop its own flow, and because of its tendency not to reliquify on heating and its being impractical to spread for these reasons.

Also Brueder does not advise that the base is to be dissolved with caustic soda or equivalent alkali.

Gerard Belgian Patent 34,869 of 1879 (Rec., 383, 384), and British Patent 38 of 1875, Encyclopedia Roret (Rec., 273) and German Hand Book by Schmidt (Rec., 390-392).

The Roret Publication and British patent describe another very old (1875) formula called "apparatine" for making an adhesive for finishing textiles and the like.

The process consists in dissolving 16 parts of potato starch in 76 parts of water and 8 parts of caustic soda solution of strength marking 25° Baume (Rec., 194). Therefore the resultant adhesive contains **over 5 parts** of water to 1 of starch base (Rec., 219).

The only point which defendants' expert Miner makes of this publication is that the appearances of the solution as it comes across are much the same as in forming the solution of Perkins glue, in that the milky mixture of suspended starch in water clears up and finally becomes transparent as does Perkins (Rec., 194, 195). **Defendants' expert Miner did not attempt to say that it has those properties of animal glue which are necessary for veneering.** Plaintiff's expert Dr. Grosvenor testified (Rec., 220):

> "The **amount of water is grossly excessive** and the hydrolysis resulting from caustic in the presence of considerable water makes the joint strength too low. Although it is an excellent size, it is worthless as a veneer glue."

The Belgian patent discloses the same "Apparatine" formula which is disclosed in the Roret French and German Handbook publications.

The title says it is "**A new composition for sizing fabrics.**"

Gerard says "any starches, feculas, meals, pulps of tubers and roots" may be used (Rec., 383). These are all good for sizing, but meals or most of them, are not adapted for veneer glue. He gives a formula, using potato starch, with

slightly **over 5 parts** of water to one of starch (some water goes in with the caustic) (Rec., 371).

He says these proportions may be varied (Rec., 383)

> "but in order to obtain an industrial and commercial product **it is necessary not to depart too much from" these "proportions which experience has caused me to recognize as best."**

This warning at the outset, leads one away from Perkins' discovery as to what happens with about three parts or less of water. Gerard says that the quality of the product improves as the energy of the stirring increases. The stirring causes it to become a relatively thin liquid. Stirring greatly improves this product for sizing purposes but it would make it worthless for veneering. Indeed, it could not be practically used for veneering whether or not it was given this stirring, because it would contain so much water that it would delay drying, and warp the wood in many cases, and produce relatively weak joints (Rec., 219).

Gerard says his product is viscous and ropy. But these are vague terms. Of course, since it is made up with only five parts of water, it is viscous and ropy as compared with the more dilute 20 to 1 solutions more commonly used for sizing (like Gerson & Sachse and Dornemann), but this is quite different from saying that it had the semi-fluid viscosity and other characteristics of Perkins' and defendants' glues.

Defendants made much of the statement in their translation of the Gerard patent that his apparatine is

> "of considerable adhesive power only to be compared to that of joiners' glue" (colle forte).

The Gerard patent does not use the term "joiners," it uses the term "colle forte," which means literally "strong glue." Strong glues, i. e., certain grades of animal glues, were used in sizing when mixed up with a relatively large amount of water. Gerard obviously had in mind merely

animal glue with a large amount of water to make it sufficiently dilute for sizing purposes. The statement, we believe, can only mean that his apparatine was different from starch sizing products on the market before that time (1874) and that it more nearly resembled animal glue in its sizing adhesive properties than the prior starch sizing adhesives. Gerard does not say that the adhesive power of his apparatine is equal to that of animal glue, but only that it had considerable adhesive power more nearly comparable with that of animal sizing glue than that of the prior starch sizing adhesives (Rec., 371, 372). Even this statement was apparently too strong, because when eight years later the apparatine was described in the chemical hand book (Rec., 392), this statement was omitted. Other later publications also fail to attribute any such characteristic to Gerard's apparatine.

Dr. Grosvenor points out (Rec., 372, 373) that the apparatine is not suitable for wood gluing and **lacks the essential qualities of animal glue for furniture veneering,** and is radically different from the product of the patent in suit, and from defendants' process and product.

Nearly fifty years have elapsed since Gerard first put apparatine on the market, and his patent was not a hidden publication first brought to light in this litigation. His adhesive had been noted and listed in reference books of the trade without teaching the art anything about starch *veneer* glue. If it had the properties of *animal glue for veneering* the trade would have used it for that purpose instead of the much more expensive animal glue. Defendants have not been able to cite a single use of apparatine for veneering or any other kind of wood gluing.

Gerard's product does not contain the requisite small amount of water (about three parts or less to one of starch). It does not have the viscous semi-fluid characteristic of Perkins' and defendants', it does not have the peculiar degree of penetration required for wood joint work, and it does not have substantially the properties of animal glue for wood veneering. The product claims 28, 30 and 31,

clearly distinguish both Perkins and defendants therefrom in these respects.

Defendants' expert, Dr. Walker, says he made up glue in the way described by Gerard, but **instead of using Gerard's 5 to 1 proportion of water he followed Perkins and used 125 parts of water to 50 parts of starch which is 2½ to 1** (Rec., 379).

Dr. Walker admits that he departed from Gerard (Rec., 379), because he (Dr. Walker)

> "intended to use the glue thus made in setting up veneers, and as already pointed out, **the veneering industry would not tolerate as much water as is here stated**" in Gerard.

Dr. Walker says he applied this glue to veneers and it was satisfactory. Of course it was; but it was not Gerard's glue at all but was Perkins' glue, made according to Perkins' formula and not Gerard's. Dr. Walker also says he made up glue with 5 parts of water and used it to glue up panels which "seemed" satisfactory but he never tested the actual strength of joint produced (Rec., 380). When he tried out any of the glue in a regular veneering factory he used the less proportion of water (Rec., 379), i. e., about 2½ parts. The reason is perfectly obvious.

Regarding the German Handbook, defendants have endeavored to make some point of the fact that the apparatine recipe is also contained in a book, entitled "Chemco-Technical Pocket Manual of Receipts for the Entire Wood Industry" (Rec., 373, 374). They would like to have the Court believe that, therefore, it was recognized that apparatine was suitable for gluing up wood.

There is nothing persuasive about this formula appearing in a recipe book for the wood industry, because, as the book shows on its title page and in the preface, it covers wood impregnating (sizing), dyeing, etc. Wood is sized or impregnated with a thin watery glue in order to fill up the pores before painting or otherwise coating it. That such

was one of the intended purposes of the recipe in this Chemico-Technical Recipe Book is shown by the footnote on page 62 of the book (Rec., 392), which explains that C. Puscher as early as ten years prior to 1882 recommended a **similar material** as **a high gloss sizing.** The apparatine may also have been intended to be used in the wood industry as a binder for colors applied to wood, because the book says, after explaining that it may be used for sizing fabrics, that "it may also be applied as a binder for dyes" (Rec., 374).

The title page of the book shows that it also covers toy-making in which paper or cardboard is frequently stuck to wood.

The fact that this apparatine was never used for gluing together pieces of wood as in veneering (Rec., 374), and that defendants cannot now so use it and that, when Perkins' discovery was announced, the veneering art was revolutionized thereby (the change from animal to vegetable glue), should be controlling.

Marsden U. S. Patent 376,445 (1888) (Rec., 254).

Marsden states in his patent that his invention relates to "adhesive paste" such as is "commonly made by boiling flour or starch and water." He says his product is for wall paper, labels, bookbinding, and for shoemaker's use, and generally for all uses to which ordinary flour paste is put. He uses caustic alkali with the starch but also adds a chemical to neutralize the caustic which prevents the caustic from acting on the starch in the way that it otherwise would.

The only indication which Marsden gives as to proportion of water is (Rec., 255, line 38) that

> "a given quantity of the powder will make about eight times its own volume of paste,"

the powder being the starch or flour with the small percentage of chemicals added thereto.

This can only mean that **he uses about 7 parts of water** to one of flour or starch base.

It is true that Marsden suggests that the paste may be thinned by the addition of water or thickened by the addition of more of the alkali and flour, but this obviously only means such changes in proportions as may be required to get the desired consistency without materially changing the nature or character of the paste and without changing its suitability for the stated uses, wall paper, labels and the like. If it were made up in any such proportions as two or three parts of water to one of starch, it would be absolutely unusable for wall paper or labels.

There were a large number of other prior patents introduced in evidence, but they add nothing material to the foregoing and are even more remote.

For the purpose of enabling the Court to better visualize the prior art and the main distinctions between the prior art processes and products on the one hand and those of Perkins and defendant on the other hand, we have appended a chart at the end of this brief, on which chart defendant's process and Perkins' preferred process are schematically illustrated beside the principle prior art processes above discussed.

The New Perkins Glue Was Not Obvious from the Prior Art.

From the foregoing it will be seen that it was common to make cloth finishing and sizing adhesives by dissolving the ordinary starch of the day (and also starch degenerated like Perkins), in from 5 to 20 parts of water with caustic.

Brueder "desired" to use less water in order that he might inject more starch into the fabric by the use of a given amount of size, but he was unable to do so with the ordinary or raw starch of the day and so suggested the use of "*soluble*" starch with from 2 to 5 parts of water *without*

caustic. Others also suggested the use of soluble starch. The record shows it has been impossible to make a veneer glue out of *soluble* starch because it has already lost the necessary tenacious adhesive properties by reason of the treatment thereof necessary to make it soluble starch.

There is also the third class, i. e., the pastes such as Higgins, in which from 1 to 7 parts of water were used, but they were made by bursting the starch grains in *acid* with heat, producing a thin weakly adhesive *dextrin* serum having commingled therein the outer undissolved fragments of the starch pellicle which if applied to wood only act to make the paste weak in its adhesive properties.

The prior art adhesives made from starch were suitable only for sizing fabrics, sticking paper and the like; none had the adhesiveness and properties of animal glue for furniture veneering or the like.

These prior art starch adhesives had been known for generations before Perkins' discovery and if it were obvious from the prior art that a furniture veneer glue could be made from starch, it would certainly have been done before Perkins, because starch has always been one of the cheapest of raw materials and the cost of animal glue for veneering created a long felt want for something cheaper.

There is nothing in the prior art to suggest that if one took a starch not degenerated to soluble starch or dextrin and used with this starch the critically small amount of water (about 3 parts or less) a furniture veneer glue could be produced. The prior art shows that those skilled in the art had always understood that if they used a starch not degenerated to soluble starch or dextrin (either before or during the making of the adhesive) then they would have to use five parts or more of water to get any kind of a useful adhesive, and if they wanted to use less water they would have to use a starch degenerated to soluble starch or dextrin (either before or during the making of the adhesive). Therefore there was no reason to suppose that any of the multitudinous combinations of different kinds of starch, with different amounts of water, with different kinds

and amounts of chemicals and with different conditions of treatment, would produce a glue having the adhesiveness and properties of animal veneering glue. The difference in the proportion of water was not a mere difference of degree so far as the resulting final glue product was concerned. Perkins was the **first to discover that the high sticking power for wood really existed in starch** and that such a glue could be made from starch when about 3 parts or less of water is used. Prior to Perkins nothing of that kind had been obtained from starch, in spite of the fact that many skilled inventors had been working on starch adhesives for generations.

Once discovered the secret of success seems very simple, and one wonders why someone did not before unearth it. But there was no reason why one should expect to obtain any such strong wood glue from starch because according to the prior art only relatively weak adhesives had been made therefrom. It was Perkins who first disclosed to the world that such a thing was *possible,* and he achieved the result by using the critically small amount of water (about 3 parts or less) with a starch which had not been degenerated to soluble starch or dextrin, being at the same time careful to avoid in the dissolving step, chemicals, such as acids, which dextrinize the resultant adhesive and so destroy the desired adhesive strength for wood veneers.

Perkins' Glue Has Revolutionized the Veneering Industry.

The Perkins invention has revolutionized the art of furniture veneering. In the sense that Perkins was the first to produce an all around veneering glue from starch he was a pioneer. Whereas before Perkins animal glue was the glue used in this industry, approximately 90% of the concerns which formerly used animal glue for veneering now use this vegetable glue (Rec., 82). The Perkins Company alone supplies over 300 concerns with it and during five years shipped out **yearly about 9 million pounds of starch base** to be made up into this glue (about 45 million pounds all

told), which made a saving for the users of about **nine and one-half million dollars**, over what it would have cost them if they had used animal glue at the prevailing prices (Rec., 81, 82).

The comments of the Trade Publications in the earlier years show that the Perkins glue was received as a new and revolutionary thing (Rec., 789 to 805).

We submit that the echo from the trade and their faithful adoption of the glue is a better guide for a court to follow than the testimony of a hired expert paid to read into prior art patents the teachings of a subsequent invention.

The Solva Co. Litigation.

Suit for infringement was brought in 1913 against the Solva Waterproof Glue Co., the Birch-Kane Co., Lowell R. Burch and Thomas B. Kane in the U. S. District Court for the Northern District of Illinois.

It appears that Burch and Kane, who controlled the Solva Co. and the Burch-Kane Co., were formerly in the animal glue business and finding that Perkins had invented a competitive substitute which was likely to seriously cut into their business, they, through their associate, one Morron, endeavored to get Mr. Perkins to take them into his vegetable glue business in 1908. Mr. Kane (who, by the way, is at the head of the Kane Mfg. Co., which has supplied the defendant here with most of its starch base and *is backing the defendant here*) went to Florida under an assumed name to try and find out the Perkins' process. Failing in this and failing to get into the business with Mr. Perkins, Burch and Kane organized the Solva Co. to make a competitive starch base and they organized the Burch-Kane Co. to act as selling agent therefor. Meeting with serious difficulties in producing the required glue, they endeavored to hire away Perkins' chemist and glue man Warren. They failed in this at first but in 1911 they succeeded in getting him into their employ. He

told them all the details of Perkins' invention, including the fact that certain raw cassava could be used without the first step treatment, and from that time on they had no difficulty.

Some of the starch base which the Solva Co. put out to be made up into this glue by the furniture or panel concerns, was a cassava starch which they had treated with chemicals substantially like Perkins. Most of the starch base which the Solva Co. put out, however, was not so treated and was not given any preliminary degeneration treatment. **It was so-called raw cassava starch just as found on the market, except they sieved it to remove dirt, etc., before shipping it to the furniture factories or panel makers.** (See p. 78, infra.) Since some of the infringing glue in the Solva Case was made by the Perkins two-step process, plaintiff, Perkins Co., relied upon claims of each group, to wit:

(1) Process claims limited to both steps of the Perkins preferred process, e. g.: claim 20.

(2) Process claims covering merely the second step or dissolving step, e. g.: claim 11.

(3) A claim covering merely the first step of the preferred process, i. e.: claim 16.

(4) A claim covering merely the glue base as an intermediate product, i. e.: claim 20.

(5) Claims covering the final or ultimate semi-fluid glue, e. g., claims 28, 30 and 31 which are in issue here.

Since the defendants Solva Co., et al., were not dissolving their starch base to make the final glue (this being done by their customers, the furniture or panel factories) the Solva Co. did not directly infringe the final glue product claims, nor the second or dissolving step claims, nor the two step claims, but **contributed to** ***infringement thereof.*** Also, apparently, they could not be held to have infringed the first step claims and two step process claims with respect to that portion of the glue which was made from cassava starch without giving it any first step or preliminary

treatment. Plaintiff, at the trial, therefore, laid particular stress on the alleged infringement of the glue *base* product claim 24 and the first step process claim.

In this Solva suit plaintiff, Perkins Co., also charged infringement of a subsidiary patent 1,020,656 having limited claims for carrying out the preliminary treatment or first step with certain alkaline chemicals and much of the case turned on the question of validity and infringement of the *process* claims therein.

Judge Sanborn's Decision at Final Hearing in the Solva Case (223 Fed., 792).

Judge Sanborn after pointing out that the patents relate not only to the process but "also to the glue itself," quotes from the description of the two step process as given in the patent 1,020,656 (not in suit here). The defendants in the Solva case were using a first step alkali process like that claimed in the second patent 1,020,656 instead of the first step acid process described in the reissue patent 13,436 in suit. Most of the Solva glue base, however, was a brand of raw starch just as it came on the market and was **not treated by any first step** chemical treatment to degenerate it before it was dissolved in the small amount of water with caustic to make the glue.

After quoting two of the two step process claims of the second patent, 1,020,656, Judge Sanborn said:

> "It is claimed for Perkins that *he was the first to produce wood glue from starch which could be used in the wood veneer art with results equal to animal glue,* and that he was able to get this result only after the most extended and patient experiment for a number of years. It is conceded that starch sizes and pastes had been produced by others, but it is said he was the first to discover the suitable proportion and co-ordination of the variable factors of the two successive steps; the first a slow and partial starch-degenerating step, and the

second an alkaline dissolving step, so regulated as to make the product like good animal glue of the proper viscosity to be spread by machinery over a large surface, and of suitable cohesiveness in itself and adhesiveness to the wood, and possessing penetration and holding power, as well as being moisture-proof and not affected by heat or drought. It is also classed that substantially all the prior art was considered by the Patent Office on Perkins' application, and that he was granted a German patent after strenuous opposition, and upon a full hearing, accompanied by actual experiments and tests." (Italics ours.)

Here Judge Sanborn particularizes with respect to the process, referring to the "co-ordination of the variable factors of the two successive steps." **He was not saying or implying that the final glue product claims covered the glue only when made by the two steps for, indeed, he later holds as new and an infringement, glue made by a single step** (the second or dissolving step).

Judge Sanborn further says in his opinion in the Solva case:

> "Defendants do not make, use, or sell the Perkins glue as it is after the second step, ready to apply to the wood veneers. They only make the Perkins glue base, and sell it to wood veneer manufacturers, who are equipped with the tanks, pipes, rolls, and other machinery used for spreading the product. If they do not infringe, therefore, by producing the base, they can be held as infringers only if the facts justify a finding of contributory infringement."

Referring to the Solva Company's position with respect to the glue *base* claim there in suit, Judge Sanborn said:

> "In order further to get the full force of defendants' position (so far as may be without giving the full argument), it should be said Perkins merely occupied a particular part of a prediscovered field. The important question was how far the starch should be *degenerated* in the first step of the process. Defendants' counsel say:

'The two extremes were the untreated starch insoluble in water at one end of the line, and at the other end the dextrinized product soluble in cold water. Between these two extremes lay a range or a field of varying degrees of degeneration. But this intermediate field had already been discovered, entered, and described by many inventors, including Virneisel, Kantorwicz, Brueder, etc. All of these inventors had expressly described as preferred that degree of degeneration just short of solubility in cold water, as we will later on more particularly show. Therefore, when Perkins apeared upon the scene, nothing remained that he could possibly do excepting to select some other specific degree within this field or range. Inevitably his invention, if any, must be one of simply narrowing or limitation, and it is from this standpoint that all the questions in the case must be viewed, including questions as to new matter introduced after the original applications were filed, and particularly after the death of Mr. Perkins.'"

This all applies to the glue *base* invention and was defendants' argument in the Solva case for invalidity or non-infringement of the glue base claim and first step claims. The above argument of defendants has no application to the final glue product invention, and Judge Sanborn disposes of the alleged defense saying:

"It seems obvious that this contention would be perfectly sound if the Perkins patents related to a new form or process of an old product. But how is it to be regarded when applied to a new product?"

Judge Sanborn goes on to say:

"If an inventor finds a chemical substance (the starch base) devoted to a particular use, conceives the idea of applying it to a new purpose, and on experiment discovers that the substance must be treated in a particular way to suit his purpose, which method of treatment is essential to his end, but of less importance in obtaining the prior art results, it is apparent that he may be regarded as a real inventor, even though he

selects a specific treatment in an occupied field. If he were making only a paste as others had done, it might not be invention to select part of the old field of experiment, although he might thus produce an improved paste. But he discovers a novel and valuable use for the old product (dry starch base) which he modifies to suit the new purpose." (Parts in parenthesis ours.)

Here Judge Sanborn gives further reasons for sustaining claim 24 for the *base* and claim 16 for the *first step* process for making the base. The Solva Company was making only the base and selling that to furniture concerns and panel makers to make into glue by the Perkins' second step. The defendants Solva Company, et al., were not making the final fluid glue. Hence they thought, by showing that they did not infringe the glue base and first step or glue base process Claims 24 and 16, they could perhaps escape infringement altogether. Therefore, the case centered largely around the novelty of the base and process of making the base.

After citing certain cases to support his holding of validity of the glue base and glue base process Claims 24 and 16, Judge Sanborn says:

> **"The patents are meritorious and valuable inventions,** *and have been successful.* They should not be narrowly construed, but treated as a distinct advance in the art, achieved only by long and exhausting trials. I think they should be sustained."

Discussing the question of contributory infringement by the Solva Co., Judge Sanborn said:

> "The witness Hase testified that he demonstrated the Solva glue in 1913 and 1914 in practically the same way the Perkins glue was used in the plant of the St. Louis Basket & Box Company, where he had been foreman. This is the second step of the process. On January 5, 1912, the Solva Company wrote to Gorham Bros. thus:
>
> 'For some time we have been trying to interest you in our Solva glue, and due to the fact that we are to-

> day making glue identically as that which you are getting from the Perkins Glue Company—in other words, we have in our employ the glue maker and chemist who were with the Perkins Company for 11 years past—we can furnish the same glue as what you are using.' * * *
>
> 'This glue you can use at the rate of 2½ or 2¾ pounds of water to one pound of glue, caustic to be used 7 per cent. to the cold mixture and 3 per cent. with heat. Some of the trade are using the 3 per cent. mixture, which avoids the staining of wood.' "

It will be noted here that the term "glue" is used to mean the "base." This occurs in many instances in the record and decisions, and has led to much confusion.

Referring to the glue which was made **without any first step** or preliminary treatment, and like defendants' glue in the case at bar, Judge Sanborn said:

> **"It often happens that cassava glue base can be used without any processing by the first step, in which case it is tested and sent to customers in its original state. Infringement clearly appears."**

This last paragraph refers to the most of the Solva glue base which was not treated by any degeneration process but was raw cassava starch G T A 46 Brand just as it came on the market. **There was no evidence that it came within the so-called 9 to 1 boil up test or the 170° hot water test specified in the Perkins patent.** It was simply tested by applying the second step of the patent to see if it would make the good as animal glue for veneering, and it did, and was accordingly sent to their customers to make glue out of by dissolving with the small amount of water and caustic and this Judge Sanborn disposed of in the three words: "Infringement clearly appears."

Judge Sanborn concluded his opinion as follows:

> "I have carefully considered the defense of prior use, and am fully satisfied from the evidence that Perkins never perfected his invention until the spring of 1907;

his applications having been filed November 2, 1908. All his practice up to about the earlier date was experimental.

As to the amendments to the specifications in the Patent Office, I think they were not new matter, but only in the line of making the real invention clearer.

There should be a decree adjudging infringement of claims 13, 16, 19, 24, 28 and 38 of the acid patent, and 2, 6, 7 and 9 of the alkali patent, and for an accounting, as prayed, and injunction, with costs."

For some unknown reason Judge Sanborn did not pass on all the claims which were relied upon by plaintiff, but he selected certain claims from each group.

Judge Sanborn, while assuming that Perkins base was old for making sizes and that his first step was also old for making such a base, held the base claims and glue base process or first step claims patentable on the ground that Perkins applied these old features to a new use. Judge Sanborn said it is claimed that

> "even if his (Perkins) glue base is substantially the same as that of Virneisel * * * he applied it to a new use of great utility by producing a cheaper adhesive, as good as animal or hide glue, less objectionable as to odor and in other respects."

It was this holding of validity of the first-step process claims and glue-base product claims to which the 7th C. C. A. in the Solva case took particular exception, as we shall presently point out.

The Court of Appeals in the Solva case nowhere stated that Judge Sanborn was reversed as to his holding that the good as animal glue made from *untreated or raw* cassava starch was an infringement of the final glue product claims such as 28, 30 and 31.

Opinion of Circuit Court of Appeals in Solva Suit, with Comments (251 Fed., 64).

The later litigation has turned largely upon the interpretation to be given this decision of the C. C. A., 7th. Its ob-

security has been commented upon by the Courts in later cases. **To discover its true meaning** we believe **it must be carefully studied** in connection with the evidence introduced in the Solva case.

We give lengthy consideration to this decision because defendants have always contended that it supported their view and that by reason thereof and the proceedings which followed, plaintiff is estopped to contend for the broad interpretation of the patent which the Court below has given to it.

In interpreting this C. A. A. opinion in the Solva suit, one should bear in mind that **the final holding of the Court was that these product claims to the Perkins final starch glue were sustained** as well as certain process claims for making it. The larger portion of the Court's opinion, is directed to and is a discussion of its reasons for reversing Judge Sanborn's finding valid the claims covering the dry starch *base* as a product *per se* and the claims for the *process* of making that base *per se*. The terms "adhesives" and "glues" were frequently applied to such dry starch bases, and therefore care must be taken not to confuse statements in which these terms are so used to mean the base, as statements regarding the finished fluid adhesives or final glue.

The opinion states:

> "The gist of appellee's contention as stated by counsel is that Perkins discovered that there is a point of degeneration of starch at which, when degenerated to that degree, the starch is treated to not to exceed three parts of water and a solvent, there is produced veneering glue as good as or better than animal glue, and that appellants have appropriated that discovery and the application of it."

The Court correctly states plaintiff's contention as to the *process* claims there involved. We submit, this does not refer to the final glue product claims here in suit. Defendant's counsel at page 29 of their Brief, have taken this statement in respect of Perkins process invention and

twisted it in a manner to imply that it limits the final glue **product** claims.

It should be noted, however, that the doings of defendants in the case at bar here, fall squarely within this definition. Their starch base is one "degenerated to that degree" at which when "treated to not to exceed three parts of water and a solvent, there is produced veneering glue as good as or better than animal glue."

Then after summarizing the defenses in the Solva Case, the C. C. A. there disposed of the new matter defense holding that the added matters were not such as to invalidate.

The opinion next says:

> "For some time prior to Perkins' alleged invention, it was old to form adhesives by dissolving starch in different degrees of fluidity and strength, according to the use it was sought to put them to, as substitutes for animal glue."

The Court is here obviously referring to the use of starch substitutes for animal glue in the *sizing* and other industries where no strong joint (such as a wood joint) was required, because prior to Perkins no starch glue had been used for furniture veneering.

The opinion proceeds:

> "The increasing scarcity of animal substances which had theretofore been adequate and the consequent growing cost thereof stimulated this development in the art, and the result was a number of patents purporting to cover adhesives of every degree of strength and for every purpose, made from starch or starchy substances."

The Court is merely pointing out the fact that there had been a more or less general substitution of starch adhesives for animal glue in various arts, such as in mucilages, sizes and pastes. This more fully appears from a further consideration of the Court's opinion. The Court also, in using the phrase "adhesives of every degree of strength," etc., ap-

parently means merely the dry starch bases which the prior art showed had been degenerated to many different degrees (frequently called differences in strength) in the sizing and mucilage arts. The statements should not be interpreted in a way inconsistent with the ultimate finding of the Court that a product which could be substituted for animal glue in veneering was not found in this great mass of prior art. They said the prior patents were only in search of weaker adhesives.

The opinion proceeds:

> "It was also an established and well known fact years prior to the patents in suit that raw, under-treated starch was not suitable for the manufacture of the better grades of adhesives, such as glue: and also that all grades of adhesives could be obtained from starch somewhere between raw starch and over-treated starch, just as they could be obtained from animal matter."

This again is a mere generalization. It is true that many of the sizing adhesives and mucilage and some pastes were made with degenerated starch, but the treatment to obtain different kinds of adhesives from starch was quite different from the treatment required to obtain different grades of animal glue.

The different starch adhesives were obtained largely by using different starches degenerated to different degrees so that the statement that "all grades of adhesives could be obtained from starch somewhere between raw starch and over-treated starch" likewise refers to the different dry starch *bases* as the term "adhesives" was frequently so used and the Court is leading up to a holding that there was nothing new in the Perkins base.

The quoted statement, therefore, merely means, we submit, that there was a range of starch bases from some of which products had been made which were substitutes for animal glue as in sizing, and does not contradict the ultimate finding that the product here involved was first discovered

by Perkins and was patentable irrespective of any particular process.

The opinion proceeds (having in mind the claim to the glue base process or first step):

> "It is the theory of the patent that the starch grain and its enveloping pellicle are rendered less amenable to water absorptiveness by degeneration or treatment under the patent process, so that the fluent glue may result from the addition of a minimum of water, since the water must eventually be eliminated."

This again refers to the process invention. The opinion further says:

> "Resultants from treated starch and similar carbohydrates supply the whole gamut of adhesives from the strongest glue to dextrine and glucose according to the treatment applied and result desired. This was clearly set out in the prior art, though the record does not show that **the Perkins article was ever exactly produced prior to the glue in suit.**"

The reference to "the whole gamut of adhesives from the strongest glue to dextrine and glucose in according to the treatment applied and the result desired" is evidently the same sort of generalization as is found in the two preceding qutotations.

The Court then says:

> "Perkins experimented in the glue production from starch extensively. **His present claims, as above stated, are for a veneer glue as good or better than animal glue.**"

The Court next considered and dismissed the Poplar Bluff Public Use Defense. The amount of water there used (and which had to be used) was excessive and the glue did not have the penetration, adhesiveness and cohesiveness of animal glue for furniture veneering purposes, nor the necessary small amount of water, and so it did not anticipate.

"The object sought" may have been to secure "a glue that was as good as good animal glue" but this object was not there attained. A sufficiently "proper article" for barrel heads was sometimes there obtained "by experimentation" and "the result was satisfactory in that plant" eventually, but that was all. The statement that "the same glue is still in practically exclusive use there" is not borne out by the evidence unless it means that they still use excessive water.

The Court in discussing this alleged Poplar Bluff prior use says, however,

> "we apply the term glue above to the finished prepared article, ready for application,"

indicating clearly that previous to this discussion of the Poplar Bluff use and in the discussion of the prior art, the Court had used the term "glues" or "adhesives" to mean merely the dry *starch bases,* as we have already explained.

The Court next sums up the prior art situation by quoting passages from defendants' brief, which are **dangerously misleading** in the way they are put and in their implications unless the real prior art situation is understood and constantly borne in mind. The summary reads:

> " 'At the time Perkins entered this field it had long been old to form adhesives by dissolving the starch in a suitable aqueous solution, in different proportions of starch to solution, according to the use to which the adhesive was to be put. The starch solutions so formed were used in various relations as substitutes for animal glue, as in sizings and coatings of various kinds, as well as in the gluing together of bodies of wood and the like.' "

The last must refer to the Poplar Bluff use, as, so far as the evidence showed it was the only instance where a starch adhesive had been used for gluing together bodies of wood.

The Court goes on with the defendant's summary of the

prior art as follows (the different degrees of solubility, meaning different degrees of degeneration or water absorptiveness):

> "Starches as found upon the market then, as now, had different degrees of solubility, depending on the sources from which they were derived, *the processes by which they had been separated from the plant* and their subsequent treatment. Consequently when dissolved under the same conditions they would yield adhesives of different degrees of fluidity dependent upon the solubility of the starch. It was established commercial practice to treat the less soluble raw starches, which would not, without excessive water, yield sufficiently fluid solutions for the various purposes for which they were designed, with reagents to increase their solubility, after which they were dried and placed upon the market. The degree of solubility of the starch depended on its original condition and the extent to which the treatment was carried, and varied from the substantial insolubility of raw starch to the ready solubility of soluble dextrine or glucose. For some uses of such adhesive one degree of solubility was desirable, and for other uses, another." (Italics ours.)

This again is a mere generalized statement with respect to starch bases. It does not state that any one prior to Perkins had originated and pointed out a vegetable glue as good as animal glue for veneering. It is not in the slightest degree inconsistent with the holding that the Perkins glue was new and patentable irrespective of the process or base used. The summary proceeds:

> "Thus, where a very thin, penetrating, easily absorbed coating, readily soluble in cold water, was desired, as, for example, for envelopes, postage stamps and the like, glucose or soluble dextrine was best."

The prior art sizings all strove for great fludity, a fluidity which would be fatal for veneer glue. Perkins pointed out that for veneer glue the adhesive must be viscous and only semi-fluid so as to penetrate the porous wood only enough to

obtain a firm rootage in the pores, but not so far as to be substantially all absorbed in the wood.

The defendant's summary adopted by the Court continues:

> "For starches for certain laundry purposes and sizings, a material less soluble in cold water was advantageous. Different sizings demanded different degrees of solubility. By stopping the process of degeneration or modification of the starch at the proper point any required degree of fluidity within wide limits could be attained."

This is merely a statement that bases differing widely in solubility or degeneration could be attained.

The Court goes on with the defendants' summary saying:

> "It had long been known at the time Perkins entered the field that dextrine was a weaker adhesive than less fully treated starch, and that, therefore, to get a maximum strength of product, the treatment should not be carried to the point where dextrine, which is soluble at ordinary temperature, is formed."
>
> "Therefore when an adhesive with great strength was desired, care was taken to stop the treatment at a point where little or no dextrine had been formed in the batch."
>
> "Now, as before stated, it is desirable in all adhesives to obtain the necessary degree of fluidity with as little water as possible, since the latter must be eliminated by drying in setting the material. For this reason it was recognized as desirable to carry the process as far as possible without the formation of the objectionable dextrine, and thus secure a maximum fluidity without detriment to the strength and adhesive qualities of the material."

This refers only to the art of sizings but even in that art it is not strictly accurate. It is true that in the sizing industry there was, in some cases and for a different purpose, an endeavor to use starches of less water absorptive character (more degenerated), in order that more starch

material might be put into solution in a given amount of water so that when a given amount of solution was spread upon or injected into the fabric there would be a greater body of starch left therein. The small amount of water was desired for this purpose and not because of any difficulty in eliminating the water by drying or because of any difficulty in the setting of the material.

The defendants' summary continues:

> "Many different reagents can be and have been employed to effect this degeneration, and among them the very reagents employed by defendant. We find in a single prior art patent the preparation of the identical glue base or material by degenerating starch to the same point to which defendants' material is modified by the same reagents and by the same method."

This evidently refers to the Gerson & Sachse German Patent or Virneisel French Patent. Our belief and contention there was that the Gerson & Sachse and Virneisel base was, as a matter of fact, further degenerated than the Perkins base. The Court held against this contention, not by reason of any different understanding of the Gerson & Sachse and Virneisel base, but by reason of *a broader conception* of the Perkins base which was thus not patentable *per se.*

Referring to this Gerson & Sachse base the summary further says:

> "This material, as stated by the patent, was put upon the market in the same form that defendants' material is put upon the market and was sold, to be dissolved by the user in a solvent containing the same aqueous solution of the same reagent, of the same concentration as defendants' customers employ. The only difference between the process of this particular patent and the practice of defendant is in the use to which the glue material is put and the conseuqent **difference of dilution** of the solution thereof. The patentee refers to the use of his adhesive for dressing or finishing, i. e., sizing or stiffening fabrics, while defendant and its customers employ the material for sticking veneer layers together. **There-**

> **fore, the prior art patentee uses and describes a relatively dilute solution, while the defendant employs a relatively heavy solution,** just as the more familiar adhesive animal glue is used in dilute solution for sizing, etc., and in heavy solution as a glue for veneers, etc. **No other difference exists."**

By "same concentration" is obviously meant same concentration of caustic in water, not the amount of water relative to the amount of starch. The latter is referred, to as the "difference of dilution." The opinion here holds that Gerson & Sachse fail to disclose the use of about 3 parts or less of water to one part of starch (they disclosed the use of 20 parts). Although Gerson & Sachse fully disclosed the Perkins first step and base combined with a second step, they did not have in the resultant glue the critically small amount of water necessary to produce a glue having substantially the properties of animal glue for veneering which Perkins was the first to discover. The summary continues:

> "It is the defendants' view that this difference is an immaterial one, especially in view of the fact that similarly modified starch had been dissolved in aqueous solution in substantially the same proportion of starch to solvent, employed by defendant, to make a glue for the same purpose as that for which defendants' glue is employed, to wit, to glue wood together, and otherwise as a substitute for animal glue."

In this last sentence "proportion of starch to solvent" means proportion of starch to caustic soda, and the sentence obviously refers to the alleged Poplar Bluff prior use where a similar percentage of caustic solvent was used, but, again, in the Poplar Bluff use the amount of water was different and so excessive that no strong joint could be obtained. Indeed the evidence was to the effect that the veneer layers could readily be pulled apart with one's fingers.

The Court did not agree with "defendant's view" here expressed, that the difference between a sizing with a rela-

tively large amount of water and a wood glue with about three parts or less of water was immaterial, for **otherwise the Court must have held all the claims of the patent invalid.** It held the difference in the amount of water to be a material one because in the end it held the final glue product claims valid and infringed.

There is nothing in this summary of the prior art, however, tending to show that Perkins invention lay in the idea of using two steps to make the glue, or in the use of a base degenerated to respond to the so-called tests of the patent, but just the reverse. The summary finds **the two-step idea and the base old in Gerson & Sachse and Virneisel.** The substance of this summary of the prior art is that the making of a base like Perkins base by degenerating with chemicals like Perkins chemicals was old, and that it was also old to dissolve this base as well as other starch bases (both natural and degenerated to different degrees) in water with caustic soda, but the main difference between Perkins and this prior art was in the difference "in dilution," i. e., the difference in the amount of water in the glue which resulted in an entirely different product both chemically and physically.

The Court next says:

> "**In view of the fact that large quantities of starch in a normal state are in a more or less degenerated state,** some much below the degree required for the manufacture of the glue of the patents, it is not deemed possible to establish a fixed standard of treatment. Some starch must be fully treated, some partially, and some restored to a better grade. The former process is accomplished by the use of chemicals and the varying of the degree of application thereof, according to the quality of the starch. The over degenerated must be restored mainly by the intermixture thereof with more or less untreated starch—a matter of general average. There is no way of knowing what the condition of this starch to be used is, except that when experimented with it responds satisfactorily to tests furnished by the patentee, calculated to determine whether the proper degree of de-

> generation is attained. **The most satisfactory of these is to apply the second step of the patent, and if the result is the veneering glue of the patents, the operator has guessed right.** If the glue is not up to standard further treatment must be applied."

The Court here finds, as we contended, that large quantities of so-called raw cassava starch come on the market "in a more or less degenerated state" and that to determine if this is suitable for making Perkins glue without the preliminary degenerating treatment with chemicals the most satisfactory test "is to apply the second step of the patent" (with the small amount of water) "and if the result is the veneering glue of the patents, the operator has guessed right." We submit nothing could be clearer to the effect that **the Court intended to hold that the veneer glue so made from natural starch (without the first step) and irrespective of whether it responded to the other so-called tests of the patent, was within the patent,** as Judge Sanborn held it to be.

Because natural starch is so variable, the Court is leading up to the conclusion that the *process* of making the *base* is variable and therefore indefinite and not patentable. The Court says:

> "Nothng but experiment avails in the successful production of the glue base. If the patent were for the preparation of a proper glue base from entirely raw starch it may be the *processes* of the two patents in suit might be valid. As it is, we see no disclosures which entitled appellee to a patent for any of his claims for the manufacture of the glue *base*. It is a hit or miss formula, and not such a disclosure to those skilled in the starch glue or adhesive art as would enable them to practice its manufacture without experimentation. They may not be required to resort to experimentation. Panzl vs. Battle Island Paper Co., 138 Fed., 48, 53; 70 C. C. A., 474; General Electric vs. Hoskins Mfg. Co., 224 Fed., 464; 140 C. C. A., 150; Chemical Rubber Co. vs. Raymond Rubber Co., 71 Fed., 179, 182; 18 C. C. A., 31.

> **The patents in suit disclose no advance upon the prior art in the creation of a proper glue base.** That must be discovered anew on each occasion. For the same reason the glue **base process cannot be deemed an invention** or an original discovery, under the facts of this case."

If, as stated by the Court, and as is true, the patent disclosed no advance in the creation of a proper glue base or glue base process (first step), how can it be logically argued that according to this same Court's opinion, this same first step or this same base is essential to give patentability? If, as found by the Court, the base was old, the glue product claims certainly could not be made patentable by limiting them to the old base.

The Court says that since the starch base might be found in the market already in proper condition and requiring no processing or first step at all, the invention could not lie in the production of the glue base *per se*. The inevitable implication of this taken with the final holding that a *product* invention was present somewhere, is that it lay in the final starch glue as good as animal glue for veneering.

The Court evidently still having in mind the glue base and glue base process, takes up more specifically certain prior art patents, and referring to French patent to Virneisel, says:

> "It is thus apparent that Virneisel was aware that different strengths of adhesives would be obtained between raw starch and dextrine. The same is true of the Gerson & Sachse German edition of the Virneisel patent for a solid vegetable mucilage, which denominates the product of the patent as vegetable glue. The Trial Judge was of the opnion that the Gerson & Sachse glue base was degenerated to the same degree as the Perkins glue base. If so, of course, it would respond to less than three parts of water and an alkali."

The Court says, "it is thus apparent that Virneisel was aware that different strengths of adhesive would be obtained between raw starch and dextrine." This, of course, applies

to the base, i. e., the "solid" product and the term "adhesives" is used to designate the bases. By "different strengths of adhesives," the Court means starch bases of different degrees of solubility or degeneration, because raw starch and dextrine have different strengths only in that sense.

The Court next quotes various passages from the Higgins patent. The Court does not say it agrees with Higgins' laudatory statements. The Court does not find that Higgins in the slightest degree anticipates or limits the main Perkins invention, the good as animal glue for veneering. The Court refers to the fact that Higgins states that at one stage the product "has extraordinary adhesiveness, like glue, but the Court does not assume to find that Higgins accurately stated the facts or that it was like *animal veneering glue*. The proofs in the Solva case, and here, show beyond doubt that the Higgins' product was entirely different from Perkins (and defendant's here). Higgins' product was the common library paste. The fact that defendants' counsel in later cases did not rely upon the Higgins patent shows that in their judgment it has no bearing on the validity or scope of the claims here in issue.

The Court, after disposing of other prior patents, however, says:

> "It is thus apparent that Perkins was advised by the prior art that to obtain veneering glue from starch he need only secure glue with a minimum of water content."

If Perkins or others were advised by any art that any glue that hoped to be successful in the veneering art must have a water content not materially different from the animal glue of that art, it is apparent that **no persons were ingenious enough before Perkins to be able to act on that suggestion** and produce a starch veneer glue having that water content and at the same time the penetration, high sticking power and other characteristics of animal glue in furniture

veneering. In all those instances of the prior art in which less than three parts of water was used, the starch was too far degenerated, i. e., to soluble starch or dextrine, and in consequence no matter what small amount of water was used with it the resultant adhesive was so weak that it was worthless for veneering. In those examples of the prior art in which the starch was not too far degenerated, the amount of water used was always too great and the product likewise worthless for veneering, although very valuable as a substitute for the *dilute* animal glue solutions used in sizing and the like.

The Court pointed out this difference as the main feature of patentability when it went on to say:

> "It does not appear, however, that anyone had obtained a good article of starch or vegetable glue as compared with animal glue. **The patents cited were not in search of veneering glue but of other and weaker adhesives.**"

The Court next says:

> "In course of this quest several of them hit upon a starch glue good enough for veneering glue."

This must mean a starch glue *base;* otherwise the statement contradicts what appears in the next preceding quotation. It is obvious that what the Court meant was that several of them (for example Gerson & Sachse and Virneisel) hit upon a starch *base* good enough for veneering glue to be made out of. This makes the statement agree with the ultimate holding and with their own earlier statement of the prior art.

The Court next says:

> "Higgins describes the appearance of it, so he must have had it."

What does "it" mean? The proofs showed that the appearance of Higgins product was quite different from that

of Perkins final glue and that he did not have it. He describes his product as "creamy white." There may be numerous products which have an "appearance" much like Perkins glue, but when tested they lack the essential properties of animal veneering glue. The Higgins material was the common Library Paste with which the Court is familiar.

The Court continues:

> "A fair article of veneering glue was made at the time of the hearing below from the glue base disclosed in the prior art patents."

This refers to the Gerson & Sachse and Virneisel base and the putting of it into solution with the small amount of water described by Perkins (not the amount described by Gerson & Sachse and Virneisel).

The Court next says:

> "There may have been some confusion of names in the terms cement, paste, etc. Starch glue, however, as compared with animal glue, does not appear to have been treated as an article of commerce prior to Perkins. Its location somewhere on the line of starch characteristics was pointed out by the condition of the art. It was known what it was. The steps to it were practically graduated. They led unerringly to it if followed—*only requiring the adjustment of liquid* to the requisite quality and quantity of degenerated starch." (Italics ours.)

The Court here uses the term "starch glue" to mean the base as was common in the trade and is again attacking the patentability of the *base* claims. This is made clear by the fact that it is referred to as "an article of commerce" and that it is located "somewhere on the line of starch characteristics." Only the base can be so characterized and the Court says it was known what the base was (e. g., Gerson & Sachse and Virneisel base). The steps to the base were practically graduated by degeneration with chemicals if need be. The steps of degeneration led unerringly to the

base if followed, but the one thing the prior art did not disclose was the proper amount of water to use with such base, i. e., as the Court says "*the adjustment of liquid* to the requisite quality and quantity of degenerated starch."

The Court next discusses certain cases as bearing on the non-patentability of the glue *base* and glue *base process claims* (not the final glue product claims), and distinguishes the cases mentioned on the grounds that in them the "formula was made plain and certain" and "the process was plainly disclosed" and produced a new article, whereas in the case of Perkins the glue *base* was old and the process of making it had to be so varied that in each case when different starches were employed some experimentation might be required. For the Court goes on to say:

> "Here we have a glue *base* which the Court finds to be old. To this appellee adds a second step for the purpose of throwing the base into solution—*three or preferably less parts of water* and a solvent to one part of glue base, which results in a *deliverance of good as animal glue from starch base, a process which appellants employed surreptitious means to discover.* If the *glue* and its production from the base were just at hand, why this underhand invasion?" (Italics ours.)

Here the Court argues, in effect, that good as animal glue from starch base was new and patentable and that the selecting of a base (which was old) and dissolving it with 3 parts or less of water and a solvent to produce the "good as animal glue, from starch base," was new. Having already found that the base might be found on the market in a raw state sufficiently degenerated for the purpose, the Court obviously intended to include the glue when made from such a base. They had previously said that to determine the suitability of the base all that is necessary is

> **"to apply the second step of the patent and if the result is the veneering glue of the patents, the operator had guessed right."**

The Court nowhere says the base must respond to the 9 to 1 boil up test or the 170° hot water test.

The Court, however, next says:

> "There was nothing new in the second step."

This is the first reference the Court makes to the novelty of the second or dissolving step. The Court does not state in which prior patent or publication it finds this so-called second step nor does the Court give any reason for holding that there was nothing new in it. By "second step" the Court must have meant the mere dissolving *per se* of starch in water, irrespective *of the result produced*, i. e., whether or not the Perkins veneer glue is produced. On any other assumption the opinion is self-contradictory and the statement is not borne out by the facts.

The Court goes on to say:

> "If the patent for the product and that for the process are valid, then it must be that **the glue** of the patent is new. The District Court having heard the evidence at first hand, **found it was new.** It also sustained the claims for a glue **base which we do not find to be valid.** The question is thus narrowed to the following propositions (1) Was the **glue** of the patents new? (2) Does the process constitute a valid invention?"

In the above quotation, the finished glue is sharply contrasted with the base. The Court, as we will show, did not disturb Judge Sanborn's finding of novelty and patentability of the final glue product claims but answered both of the last mentioned questions in the affirmative.

The Court proceeds:

> "It is true (1) that the adhesive of the prior art patents, although adverted to in those patents as glue, was never placed on the market as a substitute for animal glue or otherwise; (2) that prior to the patents in suit, while its location on the line of starch adhesive products was pointed **out, nobody actually rescued the glue of the patents from its undeveloped state.**"

Here again the Court uses the term "adhesive" to mean the dry starch base, which had been adverted to as "glue" and is commonly called "glue" in the trade. In the last part of the quotation the Court obviously means that while the prior art disclosed starches suitably degenerated (in a natural state as well as by chemicals) to serve as a base for veneer glue, nobody knew that they could be so used and nobody knew the proper amount of water to be used therewith, and nobody knew that the potentiality of a glue having the necessary fluidity, viscosity, penetration, adhesiveness and cohesiveness of animal glue for veneering, ever existed in starch or could be gotten out of any starch by any process or in any way.

The Court further sums up by saying:

> "From the evidence it appears that **there was a demand on the market for starch glue as good as animal glue and suitable for veneering**, and that appellee had built up a large business in that article that the claims of the prior art patents, except the Brueder French patent No. 114,978, aforesaid, **all were in fact limited to pastes, sizings, mucilage and other weaker forms of adhesives**; that appellee's process was not so evident as to be discovered by appellants without subsidizing appellee's employees; that there seems to have been great difficulty in getting at the correct formula; that Perkins labored years to get the latter just right; that, as stated by his expert, Carmichael, 'He proportioned the various steps to one another according to the selection of raw material, in the conversion of the raw material and in the solution of the material, being particular about the various sub-steps by which in the main step effecting the solution, he obtained a uniform and homogeneous product.' All these, considered in connection with the presumption arising from the grant of the patent, lead us to hold, though with some hesitation, that the **claims covering the finished glue product** *as well as the process claims for that article* **are valid and should be sustained.**" (Italics ours.)

It will be noted that the Court does not hold that the process claims are valid and the product valid only when

made by that process; but it holds broadly that the **glue product** claims are valid, and also the claims for Perkins' preferred process for making that product. The Court is here giving its answer in the affirmative to its two previously propounded questions: (1) Was the glue of the patent **new**? and (2) Does the process constitute a valid invention?

As to the Brueder patent, this also was for sizings as hereinbefore set forth.

It is quite true that Perkins had great difficulty in getting any formula or process that would produce "a good as animal glue for veneering from starch base." No one had ever produced such a product before. Perkins explored the field of "somewhere along the line of starch characteristics" and discovered and introduced to the trade the glue that revolutionized the industry. It sprung from Perkins and from no one else. If any one before Perkins had disclosed *any way* of producing a good as animal glue for veneering from starch. Perkins would not have labored years to get it, and the Solva Co. would not have spied on Perkins' factory and hired Perkins chemist, and the C. C. A., 7th, would not have found the product claims here in issue valid. Such a thing as veneer glue from starch was unheard of, never entered the mind of man, before Perkins. Perkins, being the first to discover a starch veneer glue, was entitled to a patent for that glue, irrespective of how it was made. He was also entitled to claims for his particular process of making it, and the fact that he wanted to be careful about carrying out the steps of his process imposes no limitations on his rights to the product. It is known that the final glue product can be made in several ways. Indeed the Court in the Solva case **had before it the fact that Perkins glue could be made from untreated starch by a one-step process.** The evidence did not show that this starch came within the 9 to 1 boil-up test or the 170° test. Judge Sanborn had held such glue to be an infringement and the Court of Appeals in the Solva case nowhere criticised that holding.

The 7th C. C. A. in this last quoted part of the opinion, clearly and unmistakably holds that a patentable invention is present, and specifies what claims are valid and are to be sustained. The Court holds that "*the claims covering the finished glue product,*" i. e., the good as animal veneering glue from starch, are valid and should be sustained. Nowhere does the Court suggest that such glue product claims are to be limited by or to any particular process of making the glue or by or to any particular test for the base from which the glue is made.

Regarding contributory infringement, the Court said:

> "Can a manufacturer, by producing a glue base under the conditions of this case (it was produced under various conditions, most of it was untreated or what the defendants call raw starch) which is not an invention but which may be used, and some of which, the Court finds from the evidence, is intended to be used in a process (second step) which is not in itself, but only in combination (with the base), entitled to patent protection, be decreed guilty of contributory infringement, notwithstanding no attempt is made by the alleged contributory infringer to so use the final step himself, and which glue base can be and is sometimes used to manufacture **other commercial adhesives than glue,** though appellee uses it for making glue only? We think so, and hold that appellant, the Solva Glue Mfg. Co., was a contributory infringer of the **final product** and of the **final process.**" (Parts in parenthesis ours.)

It has been argued that the word "combination" here used means that the process is patentable only when the combination of a first step degeneration by chemicals with the second dissolving step is used. But that is not what the Court says. It is, we submit, referring to the base. It says that the use of the base produced under the conditions of that case (it was produced under various conditions, some by intermixture *but most by merely selecting a natural or raw starch*) in combination with the second or dissolving step to produce the ultimate Perkins veneer glue, was new and patentable. Of this there can be no doubt.

The Court holding this one step (second step) glue as well as the two step glue an infringement says that the Solva Glue Manufacturing Company

> "was a contributory infringer of the final product and of the final process. The rule of law in such case is that one who makes and sells one element of a patented combination with the intention and for the purpose of bringing about its use in such a combination, is guilty of contributory infringement, and is equally liable with him who organizes the complete combination."

The C. C. A. in the Solva Case Did Not Limit the Glue Product Claims to the So-Called Tests for Base.

If the base was old as the Court found, it of course makes no difference how it is made or prepared or obtained. *If the Court intended to limit all the claims including the glue product claims 28, 30 and 31, to some particular process of preparing the base, or to a base in some particular condition of degeneration, then they would certainly have said so in unmistakable language.* Furthermore, the patentable novelty in such case would lie in the base. But that can not be because the Court in the previous part of its opinion had held that the base as well as the process of making it was unpatentable.

The Court concludes its opinion as follows:

> "The decree of the District Court sustaining the claims for a glue **base process and product** and for the so-called **second step** as such **is reversed,** and that part of it which upholds the claims of the patents for the **final process** and the **resultant product** respectively **is affirmed,** with direction to the District Court to proceed further in accordance herewith."

Here the Court holds that the claims for the process of making the glue base *per se* and the glue base as a product *per se* are invalid and this holding we do not contest.

The Court also holds invalid the claims "for the so-called second step *as such.*" As above explained, nowhere in the opinion is it pointed out where these second step claims are

anticipated or the substance of them found in the prior art. None of the prior art patents disclose the dissolving of any starch base *with caustic in about 3 parts or less by weight of water* to produce a glue having substantially the properties of animal glue for veneering. It must be that the Court considered that these claims were not limited to the production of such a glue from such a base but were merely intended to broadly cover the dissolving of starch such as *soluble* starch, in a small amount of water, as had been done in producing certain sizing adhesives. These so-called second step claims, so broadly construed as that, were properly held invalid.

The Court, however, sustains "the claims of the patent for the final process and the resultant product." They can only mean that such process claims as were left and which were limited to steps and features which would *necessarily* produce the starch glue as good as animal veneering glue, were sustained. And it also means that the claims *covering the final glue product, however obtained, were likewise sustained.* It has been argued that because the Court used the word "resultant," it meant that the product claims were only sustained as covering a product made by the two step process. It seems to us absurd to conclude that the use of this term "resultant" was intended to mean any such thing. It is not a word of limitation but merely a word of reference used to distinguish the finished glue product from the starch base product. In every other instance the Court has referred to the glue product entirely independently of any particular process of making the base and has **dealt with it broadly.** The Court previously stated "the question is thus narrowed to the following proposition: (1) Was the glue of the patents new? (2) Does the process constitute a valid invention?" Here the glue product is not at all referred to as the resultant of any particular process of getting the base. The Court had earlier said that "*the claims covering the finished glue product*, as well as the process claims for that article are valid and should be sustained." Here the product claims

are mentioned first and not at all as being in any way limited by the process of making the base. The Court also holds the Solva Company "a contributory infringer of the *final product* and of the final process." Here the final product is not in anyway defined by the process of making the base.

The question whether the glue made from **untreated raw starch** was an infringement and was squarely presented for decision in the Solva case. It was brought to the attention of the Court in the briefs of the parties on that appeal. It was forcefully brought to the attention of the Court in the Solva Company's reply brief as follows (p. 13):

> "Defendants' operation complained of consisted in furnishing starch to veneer factories for use as cement. The major portion of the starch was shipped to the customers just as it was bought upon the market, and without any processing or treatment by appellants, being sufficiently soluble for the purpose. Contributory infringement is alleged as to this portion of appellants' output because under instructions from appellants the starch was dissolved by the customer to form glue by a process coming within the terms of certain claims of the reissue patent in suit. These claims are 13, 28, and 38. Obviously there can be no question here of infringement of those claims which include or specify a preliminary treatment of the starch.
>
> The lesser portion of defendants' output as purchased was not sufficiently soluble to use as glue without some modification and such material was either given treatment to increase its solubility or was mixed with a more soluble starch to give a blend of the desired mean solubility. The specific nature of this treatment will be considered later. If the starch after treatment was too soluble for the purpose it was mixed or blended with a raw starch of insufficient solubility for use alone. In other words, **most of defendants' output was a starch which required, and was given, no treatment**, and the remainder was either a blend of under-treated and over-treated starches, or in case a treatment given a particular batch proved to have produced the desired degree of solubility it was shipped out unmixed."

There was no evidence that this raw, untreated starch responded to either the 9 to 1 boil up test or the 170° test.

If the 7th C. C. A. had intended to reverse Judge Sanborn's holding that Solva glue made from this raw or natural starch just as it came on the market, was an infringement, the Court, we believe, would certainly have said so in unmistakable language as the question was squarely presented for decision. Likewise if the 7th C. C. A. saved the glue product claims by reading into them the so-called tests for the base they would have similarly saved the second step process claims instead of holding them invalid.

We submit there is not one word in the whole decision which justifies the conclusion that the Court intended to hold the glue product claims 28, 30 and 31 valid as covering the glue *only* when the glue was made by a two step process or from a base in any particular condition of degeneration. On the contrary the facts before the Court were such and the whole line of reasoning of the Court was such that the Court, we believe, must have had in mind and must have intended that glue made by a one step dissolving process from any suitable starch in its natural state was an infringement of the final glue product claims 28, 30 and 31.

The Solva Petition for Rehearing.

After the C. C. A. had handed down its decision in the Solva Case the defendants, Solva Company, et al., petitioned for a rehearing, and the Court, we believe, by certain implication has here confirmed our view as to the meaning of its decision. In this petition for rehearing the defendants prayed (Rec., 346):

> "For a rehearing of the appeal herein for the purpose only of more definitely indicating the extent to which the decree of the District Court is sustained"

and they argued as follows (Rec., 347):

> "Your petitioners fear that in the further proceedings in accordance with the opinion, confusion may

arise in connection with that part of the final paragraph of the opinion sustaining the claims relating to the 'final process and the resultant product.' While it is our understanding that the 'final process' to which reference is here made is the complete refined process as finally adopted and described in claims 7 and 9 quoted in the opinion, we have reason to believe that a different interpretation is entertained by complainant-appellee, as evidenced by the circular, a copy of which is printed herewith, and which we are informed and believe was distributed broadcast to the veneering and paper trades. Furthermore, the only claim of those before the Court on appeal which relates to a product other than the glue base and which therefore can be contemplated as for the 'resultant product' of the final process, is claim 28 of the said patent, and is as follows:

"28. A glue comprising cassava carbohydrate rendered semi-fluid by digestion and having substantially the properties of animal glue.

This claim by reason of its indefiniteness is possibly susceptible of interpretation either as covering the product of the second step alone, under which construction it could not be sustained in view of the invalidity of the claims to the second step, or as covering the product of the two successive steps sets forth in claims 9 and 10 of the alkali patent."

And plaintiff replied (Rec., 353):

"The opinion points out * * * that the **glue base of the patents may be obtained in a variety of ways.** Such a base and the process of making it, after **being given a broad construction by the Court, is found to be old,** and the Court also says the second step is not new or patentable 'as such'; but the combination of the two operations in related succession to produce the good as animal glue suitable for veneering, the Court finds to be new and patentable as a process, and the resulting finished glue, the Court finds to be new and patentable as a product.

As the opinion plainly indicates, the final glue product may be made by suitably treating a suitable base, whether previously degenerated by the alkali treat-

ment, or by the acid treatment, or obtained by intermixture **or simply found in the market**—provided only that that base is in the proper state or condition of degeneration when treated to make this final glue product.

The Court evidently felt that the 'second step alone' or the 'second step as such' might produce other products than the 'starch glue as good as animal glue and suitable for veneering' covered by claim 28 and others (as if, for example, applied to the under-degenerated starch, such as raw starch, or to an over-degenerated starch, such as dextrine), and therefore held that the claims for the 'second step as such' were invalid."

In the last sentence, plaintiff obviously had in mind as "raw starch" the old *high viscosity* raw starches, not the modern raw starches of medium viscosity like defendants' base.

The Court made no criticism of plaintiff's reply and denied the petition for rehearing without opinion, and thereby, we believe, repudiated defendants' view and confirmed our view that the patent was held to cover the glue when made from untreated **starch as found on the market**, provided only that the starch is such that the good as animal veneering glue is obtained as described in the product claims 28, 30 and 31.

Judge Sanborn's Memorandum on Entry of Final Decree in the Solva Case (Rec., 359).

The mandate which came down to Judge Sanborn (Rec., 358):

"ordered, adjudged and decreed * * * that the part of the decree of the said District Court in this cause which upholds the claims of the patents for the final process and the resultant product respectively, be, and the same is hereby affirmed.

And it is further ordered, adjudged and decreed by this Court that the part of said decree of the said Dis-

trict Court sustaining the claims for a glue base process and product and for the so-called second step, as such be, and the same is hereby reversed, and that this cause be, and the same is hereby remanded to the said District Court with direction to proceed further in accordance with the opinion of this Court."

An accounting having been waived by stipulation, the only thing left for Judge Sanborn to do was to enter final decree on this mandate and in doing so **he was not called upon to pass on the scope or construction of any of the claims.** The mandate did not specify the claims by number so that it was left for Judge Sanborn to define by number which claims the C. C. A. had held valid and to define by number which claims the C. C. A. had held invalid. As to the claims for the glue base and glue base process, to wit, claims 24 and 16, there was no dispute but that the C. C. A. had held them unpatentable. As to the claims "for the so-called second step, as such" there was a dispute as to which claims were meant. The defendant there contended that such claims as 11, 13 and 38 were meant, while plaintiff contended otherwise. Plaintiff argued that the C. C. A. in upholding "the claims of the patents for the final process" meant such claims as 11, 13 and 38, while defendant contended that these were claims "for the second step as such" which the C. C. A. held invalid. The controversy before Judge Sanborn centered about this dispute. The defendant there also contended that the C. C. A. had held invalid the glue product claims 28, 30 and 31, etc.

Judge Sanborn agreed with plaintiff as to the glue product claims 28, 30 and 31 but disagreed with plaintiff with regard to the second step process claims 11, 13 and 38 and held that the C. C. A. intended that those should be decreed invalid.

Judge Sanborn in his memorandum for final decree said (Rec., 359):

"The opinion of Judge Kohlsaat requires very careful study, as well as the patents, and even then the

opinion is obscure, and another appeal may be necessary to fully determine its meaning."

Judge Sanborn here says "another appeal may be necessary to fully determine its meaning." He was ruling against the defendants on the final glue product claims 28, 30, 31, etc., holding them valid and infringed, and the defendants might appeal; and he was ruling against plaintiff as to claims 11, 13 and 38, and the plaintiff might appeal; **but as to the glue product claims 28, 30, 31, etc., he held them valid and infringed in his final decree, and plaintiff could not appeal from such holding in its favor.** Judge Sanborn (discussing the process invention and not the glue product invention) goes on to say in his memorandum (Rec., 359):

> "The first process or step of the patents is for the purpose of creating a suitable starch base, and then applying to that base the second step, in order to produce the final product, or starch glue. These are the only steps or processes described, and they may be taken singly or together. Both are old and unpatentable when taken separately, but when joined together to produce starch glue which has the properties described by Mr. Perkins, and which is as good or better than animal glue, they are now and make patentable subject matter, both as a process and as producing a patentable product consisting glue."

There was obviously no necessary implication in this, that the new glue was only patentable when made by the two-step process. Judge Sanborn says:

> "Glue made in the manner described in the patents, and having the characteristics there defined is also a patentable product."

The patents as heretofore pointed out described at least two ways of making the final glue product, one by the two-step process which was preferred, and the other by a one-step process applied to so-called natural starch; and Judge

Sanborn's statement above is, therefore, to the effect tha
the **glue made in either of these ways is a patentable produc**
Judge Sanborn continues:

> "The glue base is not such a product because it i
> not only found in a natural state, but was made b
> prior inventors as a base for mucilage as well as
> glue produced by a different second step."

Here Judge Sanborn states that **the glue base may b**
found already sufficiently degenerated in the natural stat
and it is clear from this and from the immediately precedin
sentence quoted above that he found that **the Perkins glu**
made from such a natural base was, equally with glue mad
from a processed or treated base, the product which the 7t
C. C. A. had held patentable and covered by "the finishe
glue product" claims which the C. C. A. had held valid
Judge Sanborn continues his statement of reasons for hold
ing invalid the base claim 24 and the first-step process clai
16 as follows:

> "The first step designed to produce the glue base i
> therefore old and necessarily unpatentable, hence th
> base itself must be equally impossible of patent pro
> tection."

But when it came to what was meant by the second step
Judge Sanborn was uncertain. He said:

> "But as the second step, when applied to a suitable
> glue base and with the result described, produces a
> patentable product, why does the Appellate Court de-
> cide it to contain nothing new, when considered alone
> and by itself? This is not explained in the opinion, and
> the meaning must be gathered from the context."

Judge Sanborn assumes without question that the Per-
kins glue made either from the starch found in suitable con-
dition in a natural state or from starch previously suitably
treated by the first step, was, in the C. C. A. decision, held to

be a patentable product, but he was unable to understand why the C. C. A. considered the second step process claims invalid and why the claims to the second step applied to either of such bases with the results described, contained nothing new.

Judge Sanborn then quotes from the decision of the C. C. A. where it is found that the only difference over the prior art was the difference in the amount of water (Rec., 360, 361), and that starch comes on the market in a natural state degenerated to different degrees, and that the way to find out if a starch is suitable is to apply the second step and see if it makes the veneer glue. Judge Sanborn further quotes from the decision of the C. C. A. where the C. C. A. points out that the Solva glue was made by merely applying the second step to the base, and (Rec., 361) where the C. C. A. points out that the prior art patents

> "were in fact limited to pastes, sizing and mucilage and other weaker forms of adhesives," etc.

The last part of this quotation from the C. C. A. decision reading (Rec., 362):

> "All these, considered in connection with the presumption arising from the grant of the patent, lead us to hold, though with some hesitation, that *the claims covering the finished glue product as* well as the process claims for that article are valid and should be sustained." (Italics ours.)

This apparently made it clear to Judge Sanborn that the 7th C. C. A. rested the patentability of Perkins' invention in all its respects on the "finished glue product" and that the claims for the **process** were only valid when the process described in the process claims was such as to **necessarily** produce "that article," and that the so-called second step claims were not limited to a process which would **necessarily** produce a veneering glue.

Judge Sanborn then says:

> "From these quotations it seems probable that the Appellate Court intended to sustain only those claims of the patent which include only the two steps, and only when their use results in the Perkins glue, together with those additional claims which count on such glue as a product of the two steps, and no others," i. e., **no other claims** and not no other glue.

Bearing in mind that Judge Sanborn was not construing or defining the *scope* of any of the claims but merely defining by number which had been held valid and which invalid, it is clear that he used the words "as a product of the two steps" merely to identify and distinguish the glue product from the other product, i. e., the glue base (the product of the first step which was frequently called "glue") the claims for which he was finding invalid under the mandate.

It was not the two steps which, as such, gave novelty to the process claims but as the Court states, only when their use results in the Perkins glue—a glue new in kind and the Pole Star of novelty; **and "such glue" was "a product of the two steps" but this is far from saying that if otherwise made it would not be covered by the patent.**

We submit there is absolutely nothing in this memorandum of Judge Sanborn justifying the conclusion that he intended to interpret the mandate of the 7th C. C. A. as limiting the final glue product claims 28, 30, 31, etc., to the finished glue when it was made by the two-step process or from a base coming within the 9 to 1 boil up test or the 170° test. Any such finding would have been outside of his duties.

Judge Sanborn goes on to say:

> "The result of the foregoing is that the argument of counsel for defendants is adopted so far as the construction of the decree is concerned, and that of plaintiff's counsel rejected."

Judge Sanborn here is referring to the argument of counsel for defendants that the 7th C. C. A., when it held

certain second step process claims invalid, referred to process claims 11, 13 and 38. The quotation, we submit, has no reference to any interpretation or construction of the glue product claims 28, 30 and 31; for as to those product claims Judge Sanborn adopted the argument of plaintiff and rejected that of defendants' counsel, who contended that the 7th C. C. A. held them invalid.

The Disclaimer as to Process Claims 9, 10, 11, 12, 13, 14 and 38 and the Glue Base Claims (Rec., pp. 230, 231).

The final decree on mandate in the Solva case having held certain claims invalid, a disclaimer was filed under U. S. R. S., Sec. 4917, as required by statute.

The Court found that Perkins was not the inventor of the glue base *per se;* nor the inventor of the first step degeneration process, *per se*, nor of the second step, *as such.*

Plaintiff accepted this holding and filed an absolute disclaimer of these base and base process claims, and disclaimed from the second step process claims any process which did not have certain process features. But we submit this could not affect plaintiff's monopoly secured by the final glue product claims 28, 30 and 31. The substance of the disclaimer is as follows (Rec., 231):

> "Enters its disclaimer of claims 1, 3, 4, 6, 7, 8, 16, 24, 25, 26 and 27 thereof (to wit, the claims for the glue base per se and for the process of making the glue base per se) and further it hereby disclaims from claims 9, 10, 11, 12, 13, 14 and 38 of said reissued Letters Patent, No. 13,436, any process of making glue, excepting where the starch or starchy product or carbohydrate subjected to the process is degenerated to the extent described in the said reissued Letters Patent No. 13, 436, whereby the process results in the good as animal glue described in said reissued Letters Patent No. 13,436."

As will be seen from the above, the disclaimer did not mention the glue product claims 28, 30 and 31 here in suit. No disclaimer was filed as to them.

Plaintiff did not file the disclaimer as to them because the glue as defined in these claims was new in and of *itself*, and *they had been held valid.*

The decision required no disclaimer whatsoever with regard to the glue product claims in suit. This is more fully discussed hereinafter.

Judge Sessions' Decision in the West Michigan Furniture Company and Hood & Wright Cases (279 Fed., 454).

These suits were started in 1919 shortly after the termination of the Solva litigation and **subsequent to the disclaimer.** The alleged infringing glue was made by dissolving the base in 2½ parts of water with caustic substantially as defendants do here. The starch base, however, instead of being all one brand of raw cassava was a mixture of starches as they came on the market, about 70% being natural or raw cassava just as it comes on the market and the balance partly raw cornstarch known as pearl cornstarch, and partly thin boiling cornstarch.

Judge Sessions says in his opinion:

> "The glue base manufactured and sold by the National and International Process Companies and used by defendants *is not prepared in accordance with the method or first step of the process of the patent but is produced by mixing commercial* starches of different grades and kinds, the *raw*, under-degenerated and over-degenerated starches being so proportioned that the mixture has the same average degeneration and the same water absorptive properties as the processed glue base of the patent." (Our italics.)

Judge Sessions, interpreting and following the decision of the 7th C. C. A. in the Solva case, held that the glue made from this base was an infringement, which is in effect a

holding that to infringe the glue product claims it is unnecessary that the base be one produced by Perkins' first step, but that it may be a mixture of raw underdegenerated and overdegenerated starches just as they come on the market and nowhere did he say that it was necessary that the base respond to the 9 to 1 boil up test or the 170° test.

It did not appear from the testimony whether this National Process and International Process glue base came within the 9 to 1 boil-up test. Indeed, the testimony was silent on the subject. Judge Sessions, therefore, must have held it immaterial whether or not said base came within this 9 to 1 boil-up test. Judge Sessions says:

> "It is equally clear that the claims for the *finished product* (Claims 28, 30, 31, etc.) and for the complete process of preparing such product, including the two steps thereof in combination or succession (Claims 19, 20, etc.) are valid." (Parts in parenthesis ours.)

Here again the Court makes the product—vegetable veneer glue—the Pole Star of novelty and by which the novelty of the process claims is to be measured, and not the reverse.

Judge Sessions goes on to say:

> "It is also certain that the claims for the glue resulting from the application of the final process to the glue base of the patent are valid."

This last quotation refers to the second step *process* claims 13, 38, etc., not only because there is no other language that can refer to claims 13 and 38 but also because they are the only claims drawn to the application of the final or dissolving step of the patent to the glue base of the patent, those claims having been limited by the disclaimer to a final or dissolving step applied to a base degenerated to the extent described in the patent.

It has been argued that the last mentioned quotation refers to the product claims 28, 30 and 31. This cannot be, because these product claims 28, 30 and 31 were covered in the preceding sentence in Judge Sessions' opinion.

Judge Sessions further says:

> "In his specification, the **patentee points out, or at least suggests that his glue base may be produced without using his preferred process.** It must follow that the claims for the inventor's final process applied to or in combination with the glue base of the patent, in whatever manner such base may have been produced, are valid."

Judge Sessions was here discussing Perkins' "final process"; in other words, the process covered by claims 13 and 38, and even as to those he held that the claims are not limited to Perkins' preferred process, but that they cover the process when applied to the glue base of the patent in whatever manner the base may have been produced.

Judge Sessions takes up the disclaimer, saying:

> "Of course the plaintiff is bound by its disclaimer, but **the limitation thereby imposed does not extend beyond the plain meaning of the language employed and the purpose sought to be accomplished.**"

The language of the disclaimer shows that the limitation applies only to the second step process claims 13 and 38, **and does not limit the glue product claims 28, 30 and 31,** because those had already been held valid by both Courts, and there was no necessity for any disclaimer of any kind as to them.

Judge Sessions says:

> "The sole object of the disclaimer was to narrow the claims with respect to the starchy product or glue base to be subjected to the final *process* of the patent."

In other words, it had reference only to the final *process* claims 13 and 38, etc. As to those process claims 13 and 38, and as to those only, he says:

"Under the disclaimer the starch or starchy product to be processed (under process claims 13 and 38) must be degenerated to the extent described in the patent before being subjected to the final process of the patent. So limited the claims are valid and infringed." (Part in parenthesis ours.)

He thereby implicitly finds that the product claims 28, 30 and 31 are not so limited.

In these two cases against West Michigan Furniture Co. and Hood & Wright, the dependants took appeals. No supersedeas was asked pending these appeals so the accountings were proceeded with in accordance with the interlocutory decrees and the Master found the plaintiff entitled to profits of $15,494.46 in the West Michigan Co. case and profits of $61,973.14 in the Hood & Wright case. The appeals were later withdrawn or dismissed for lack of prosecution.

The Nature of the Infringement in the Case at Bar.

The next case to be tried was the case at bar.

In this case the defendant Holland Furniture Company used two bases in making their glue. They used a little starch base put out by the International Process Company (the same as in the West Michigan and Hood, et al., cases) but the great bulk of their base was a base put out by the Kane Manufacturing Company.

The defendant raised no question as to infringement based on their glue made from the International Process base (Rec., 73), and the whole case before Judge Sessions centered about the question whether or not the Holland Furniture glue made from the *Kane base* was an infringement, so the only question here is whether defendant Holland Company's glue made from the Kane base is an infringement. The defendant did not attempt to differentiate its *Kane* base glue from the glue of the patent in suit or from the glue made from the International base which it conceded to be an infringement. There was no testimony re-

futing plaintiff's testimony to the effect that *Kane* base glue (the final glue) had all the characteristics and was identical with the glue made by the Perkins preferred process. The defense was that the Kane base glue was not made by the particular process or from the particular base Perkins preferred and described in the patent. Plaintiff contended that in respect to infringement of the glue product claims 28, 30 and 31 the particular process employed was immaterial. We believe Judge Sessions agreed with this in his opinion for interlocutory decree hereinafter discussed and an interlocutory **decree was entered holding the Kane base glue to be an infringement of the glue product claims 28, 30 and 31.** After later decisions by the C. C. A., 2nd, and the C. C. A., 7th, Judge Sessions reversed himself and entered the final decree below holding the *Kane* base glue not an infringement on the ground, we understand, that these Circuit Courts of Appeal had read the Perkins two-step process into these product claims and as so limited by construction they were not infringed by this *Kane* base glue.

To show that defendants' process produces the same glue as Perkins we will discuss the defendant Holland Company's process in some detail.

The defendant dissolves the Kane base with caustic in the same 3 or less parts of water which Perkins specified and **produces the same glue as Perkins.**

Defendant's Base is Degenerated.

At the trial in open Court plaintiff's expert testified that **the Kane base was degenerated.** To meet this testimony defendants put on the stand Mr. Grossman, the chemist of the Kane Manufacturing Co., which sold the Kane base to defendant, and he testified that defendants' Kane base was pure cassava flour of G. T. A. brand or sometimes G. T. G. brand which is identical with G. T. A. (Rec., 48), and that the only treatment the Kane Co. give this base is a sieving process to remove impurities and that they give it no chem-

ical or degeneration treatment of any sort (Rec., 48, 49). Plaintiff's counsel has no reason to doubt the truth of this. Grossman then stated that in Java the starch was made by a washing process and the more washings it receives the higher its viscosity (Rec., 487, 500). He further states that the Kane base runs uniform (Rec., 518). He practically admits that the **Kane base may have been degenerated in Java** by fermentation although he says he does not believe so (Rec., 55, 56) and bacterial action in Java might reduce the viscosity of the starch (Rec., 57). **He says if it had been degenerated, the starch would probably show an acid reaction** and that the Kane base is "absolutely neutral" (Rec., 57). However, both **defendants' expert**, Epstein, and plaintiff's expert, Dr. Grosvenor, **found it to have a distinct acid reaction.**

The substance of defendants' further testimony on the point is as follows:

Seligman testified as to the method of preparing cassava starch in Java in which the starch is separated from the root by grinding and washing processes. But it is difficult to get into factories and be permitted to nose around and ask questions or touch anything and he only examined one factory carefully (Rec., 476). He says some cassava is given more washings in Java than others which determines its quality (Rec., 470). He further says the purity of the wash water and the agricultural conditions affect the quality of the product (Rec., 472), but the more washings it is given the more body or higher viscosity it has (Rec., 475, 478).

The testimony of defendants' witness Wilson was practically to the same effect (Rec., 483, 486). He only visited two mills (Rec., 482, 484). None of the witnesses examined the mill in which defendants' Kane base, the G. T. A. and G. T. G. brand is prepared. Grossman says repeated washing increases the viscosity by gradually removing certain matter which comes from the intermediate stages of starch development, the presence of which in the starch is the cause

of its relatively low water absorptiveness or viscosity (Rec., 516). He tested the viscosity of a sample of defendants' Kane base, the Perkins base, two raw starches, K. T. H. and Royal, just as they come on the market, and a sample of starch he himself prepared and which had received different amounts of washing with the following results (Rec., 512-515):

K. T. H. Starch	49 3/5
His Starch after 9 Washings	55 2/5
Perkins Commercial Base	60 3/5
Defendants' Kane Base	100
His Starch after 12 Washings	108 1/5
" " " 15 Washings	138 1/5
Royal Starch	166 1/5

The testimony of defendants' witness Epstein was to substantially the same effect (Rec., 525-527). In his tests for viscosity by a somewhat different method from Grossman's he got Perkins base—102, Kane base—132 and Royal cassava—164 (Rec., 526). He also performed a centifuge test (Rec., 521) and a Gold Number test (Rec., 523, 524) both of which showed that the Kane base was considerably more degenerated than the Royal, although not quite so much so as the particular commercial sample of Perkins base which he selected.

The experts for both parties agree that viscosity is a measure of the extent of degeneration. Grossman says viscosity will show whether starch has been degenerated (Rec., 494) and Dr. Grosvenor points out that it is a measure of the degeneration (Rec., 541, 556), and Epstein says degenerated starch shows lower in viscosity (Rec., 506).

Therefore what the tests made by defendants' experts show, is that **the Kane base is considerably more degenerated than the sample of Royal and other starches which they tested.** Indeed the best Epstein can say is that the Kane product has not been so much degenerated as the Perkins commercial product (Rec., 524).

Since the grant of the Perkins patent the viscosity of cassava starches as they come on the market has fallen off greatly (Rec., 41, 42, 70-72, 130) so that defendant is enabled to obtain sufficient starch **already suitably degenerated and sufficiently uniform to make the glue therefrom** without first giving it a preliminary degeneration treatment. The viscosity of the so-called Royal as it comes on the market has decreased considerably, about 40% (Rec., 70, 546), so that a fairer comparison of viscosities would be as follows:

K. T. H. Starch as it now comes on the market	49 3/5
Perkins' commercial base	60 3/5
Defendants' Kane base	100
Royal as it came on the market in 1912	about 275

Other cassava starches came on the market with similar high viscosities around 1912 (Rec., 71). It is these old high viscosity starches which Perkins referred to as **"ordinary"** starch and found unworkable in about 3 parts of water with the machinery then available. Therefore, when these are taken into consideration it is seen that **defendants' Kane base is almost as much degenerated as the particular sample of the Perkins base.**

Defendants' witnesses claim (although they have no positive knowledge of the matter) that no chemicals were put in the batches in Java and if such is the case **the only explanation for the presence of the acid in the Kane base is that it underwent bacterial or fermentative degeneration** in the process of preparing it in Java, or subsequently. Epstein admits that degeneration may be obtained by bacteria or fermentation (Rec., 506).

We do not question but that repeated washings may in some or many cases increase the viscosity of the starch, and the degenerated condition of the Kane base may be due to *lack* of repeated washing, but the presence of the acid in

the Kane base indicates very strongly that it has also undergone fermentive or bacterial degeneration. For the purposes of this case we cannot see that it makes any difference whether the low viscosity or degenerated condition of the Kane base is due to one cause or the other or to some different cause.

The defendants apparently realized that their testimony tended to confirm rather than controvert, plaintiff's contention that defendant's Kane base was degenerated for they next had Mr. Grossman attempt to perform the 170° test described in the patent in an attempt to show that the base was not degenerated so much as to come within that test. This test is described at page 4, line 75, of the patent.

But as previously explained, the critical test for determining whether the base is suitable, if any, seems to be the one referred to at page 4, line 42, of the patent, where it says the base is one which

> "may be formed into glue by using only from one to three parts of water."

There is no question but what defendant's Kane base falls within this test because it is admitted that defendant made its glue with it by using only about 2½ parts of water.

This is applying the second or dissolving step of the patent and is **the test approved by the Circuit Court of Appeals in the Solva Case** (ante, p. 66) **and by defendant's expert in this case** (ante, p. 28).

Plaintiff conceded at the trial that defendant's Kane base was not degenerated to the point where it would come within the 9 to 1 boil-up test described in the patent, but the testimony above discussed makes it clear that defendants' Kane base was degenerated almost to this point, and plaintiff's expert testified (Rec., 36, 72, 73) that **defendants obtained a further reduction in viscosity in the second or dissolving step by prolonged agitation with heat thereby making the resulting glue identical with that of the patent.** This testimony is not seriously disputed.

Defendants' counsel say in their brief (p. 3) that defendants' glue is a "heavier glue." Of course, defendants' mixture is somewhat thicker, heavier and more viscous during the *earlier* stages of the digestion or solution. This would be expected. Defendants' witnesses have emphasized this as though the difference existed when the glue was finished, whereas, in fact, **when the glue is finished and ready for the veneers it is just like the glue produced by Perkins' preferred process.**

If plaintiff were here alleging infringement of *process* claims, and those process claims were limited to the use of a base degenerated to some particular degree before being dissolved, then it would be pertinent to show that defendants, in carrying out their *process,* used a base in that particular condition. The kind or condition of base used would be a part of the process. But when, as here, plaintiff is resting only on the finished glue *product* claims, the claims which cover the starch glue as good as animal glue for veneering, then, since the **defendants' process produces this same glue product** of the patent, and **the patent says it may be produced without the preliminary treatment,** the product claims are infringed.

Judge Sessions' Opinion for Interlocutory Decree in This Holland Furniture Co. Case (279 Fed., 457).

Judge Sessions does not attempt to hold that, to infringe the product claims, the "starch base of the required degree of degeneration" must be one which comes within the 9 to 1 boil up test, or 170° hot water test.

He says:

> "Manifestly the resultant glue base is the same whether consisting of a mixture of starches of different degrees of degeneration or of a single starch of the same degree of degeneration as the mixture. **Defendants' final product** is obtained by subjecting the glue base to the treatment described in the patent as the second or final step of the patented process and **is identical with the glue of the patent.**"

This, we submit, is a flat holding that the Holland Furniture Company glue made from the Kane base is identical with the glue of the patent.

Judge Sessions further says:

> "And while probably, there is not such a complete independence of product and process in the product claims as is contended for by plaintiff, defendant, Holland Furniture Company, does so combine product and process in the preparation of its glue as to infringe the product claims of the patent."

In the first part of this quotation, Judge Sessions, we believe, had reference to a statement made by plaintiff's counsel at the trial, to the effect that the glue product claims 28, 30 and 31 covered the glue product no matter how made. Judge Sessions evidently felt that these glue product claims had certain process features recited in them by which they must be limited, such as, for example, that the glue must be one "formed" of a starchy carbohydrate "by union therewith of about 3 parts or less by weight of water," etc., and that the glue must be one in which the base "is dissolved without acid in about 3 parts of water or less." Judge Sessions evidently thought plaintiff's counsel contended that the glue product claims were not limited by **these limitations expressed in the claims themselves, whereas the fact is that we admit that the claims are limited by these limitations which are described in the claims themselves. These limitations may be considered in the nature of process limitations or in the nature of limitations as to resulting conditions in, and characteristics of, the glue itself;** but in so far as any process limitations are recited in the claims themselves, the claims are, of course, so limited, and defendant, clearly infringes them, because **as to any such limitations they are equally and concededly found in defendant's glue.**

It will be noted that Judge Sessions first considers the infringement of the *product* claims, and finding the defendant's final glue substantially identical with the glue of the

patent, he finds the *product* claims 28, 30 and 31 necessarily infringed. Judge Sessions next and separately therefrom takes up the *process* claims 13 and 38, which were in issue before him, and says:

> "In compliance with the promise made in its answer to one of the interrogatories propounded, defendant, Holland Furniture Company, furnished to plaintiff what is claimed to be a fair sample of the base used by it in the production of its glue. The sample of glue base so furnished has been tested and analyzed by plaintiff's expert who testifies that the starch of which it is composed has been degenerated as required in the *process* claims of the patent. Testimony based upon an analysis of a single sample is not entirely satisfactory and ought not to be accepted as conclusive. If defendants' glue base consists of a starch which has been degenerated as described in the patent, the *process* claims declared upon are infringed. On the other hand, if the starch base has not been so degenerated, the *process* claims are not infringed. Further proof upon this question may be taken by either party upon the accounting." (Italics ours.)

It is to be noted that Judge Sessions makes a sharp distinction here between the *product* claims and the *process* claims, limiting his discussion and ruling in regard to the degeneration of the base to the *process* claims. In other words, there was no dispute at the trial but that all of the final glue made with the Kane raw starch base was the same, and the Court held that it was "identical with the glue of the patent" and was an infringement "of the product claims of the patent," but the *process* claims of the patent are limited to the degree of degeneration described in the patent, and since the testimony as to the degeneration of the Kane base was confined to one sample (even that concededly did not come within the 9 to 1 boil-up test), the Court did not feel that the testimony should be accepted as conclusive on the issue of infringement of the *process* claims, even though **all the glue made therefrom was an infringement** of the

product claims whether it was so degenerated or not, and, therefore, for *accounting* purposes, Judge Sessions permitted further proof on the issue of infringement of the *process* claims.

Our interpretation of Judge Sessions' opinion was confirmed by the Master in his report. After quoting from Judge Sessions' opinion, the Master says (Rec., 602):

> **"It is clear that the Court has authorized a decree that the defendant has infringed the product claims of the patent."**

This referred to the glue made from the Kane *raw starch base*, for the Master then goes on to say:

> "Nevertheless, I have been directed to receive testimony as to the degeneration of the glue base furnished to the defendant by the Kane Manufacturing Company and used *in its infringing product* and have done so." (Italics ours.)

Then after further quoting from the opinion of Judge Sessions and discussing the testimony, the Master concludes (Rec., 604):

> "I find, therefore, that the **process claims of the Perkins patent are not infringed** by defendant's use of the Kane glue base.
>
> This finding cannot be used however, as a basis for my computations on the accounting. **The product claims of the patent have been decreed to be infringed** and the defendant's entire profits resulting from such an infringement must be calculated and reported."

The Master's findings do not dispute that the Kane base was degenerated in the sense that it was of relatively low viscosity. He bases his conclusion of non-infringement of the process claims on his finding that the base was not sufficiently low in viscosity to come within the 170° F. hot water test referred to, and, therefore, according to his con-

clusion, it was not degenerated to the extent specified in the patent as required by the process claims. Whether the *process* claims are limited to this test is no longer material for none of the *process* claims are here relied upon.

The Master found that the defendant Holland Furniture Co. purchased and used 121,149 pounds of glue base (most of which was the Kane glue base) and because of the use of which to make the veneering glue it infringed the product claims of the patent and that its savings because of said infringement amount to $30,802.55 (Rec., 608).

Judge Sessions failed to confirm the Master's report, not because it was not correct as based on the interlocutory decree, but because in the final decree he was about to enter he was reversing his interlocutory decree in which he held the Kane base glue to be an infringement, and under such reversal the Master's report was no longer applicable.

Judge Cooper's Opinion in the Standard Furniture Company Case (279 Fed., 458).

This was the next case to be tried. In this case the defendant likewise used as a base a cassava starch just as it came on the market. It was called "Viscamite." There was no evidence that it had received any chemical degeneration treatment for the purpose. **It was substantially the same as the Kane base in this Holland Case.** As in all the other cases the glue was made by dissolving the base in the critically small amount of water with caustic as specified by Perkins.

Judge Cooper in his opinion said:

> **"Before Perkins, animal glue was practically the only glue used in the art of furniture veneering where strong joints were required."**
>
> "The starch adhesives known before Perkins either contained **too much water,** or, if they contained the requisite small amount of water, **lacked for other reasons the cohesive and adhesive strength and the spread-**

ing and flowing qualities necessary in the wood veneering art.''

After pointing out the exacting requirements for a veneer glue and the great success of Perkins glue and that it met these exacting requirements, Judge Cooper refers to the Perkins preferred two step process and says:

> ''The **defendants omit the first step,** but take a cassava starch as a base and substantially follow the second step of the Perkins patent and **get glue like Perkins glue.''**

After disposing of other defenses Judge Cooper takes up the prior art and says:

> ''Coming now to the defense numbered (2) above, the prior art, it is found that most of the patents cited by the defendants have heretofore been dismissed by the courts as not being anticipatory of the Perkins patent. **He made an advancement in the art which was meritorious and far-reaching.** In four decisions, three in two District Courts and one in the Circuit Court of Appeals of the Seventh Circuit, it was held that the Perkins patent for **glue product had not been anticipated** by anything in the prior art which was cited to these courts. Of the patents in evidence here and not in the former cases, there are but two, the French and Belgian patents, Nos. 102,200 and 34,869, respectively, of Gerard, which disclosed a process and product called 'Apparatine.' Gerard's English patent for the same product was in evidence and considered in the Solva Case, but the defendants contend that the claims were not as fully stated as in the corresponding French and Belgian patents. **This 'Apparatine' was entirely different from the Perkins Glue and wholly impracticable for wood veneering.** The broad general statement in the Gerard patent that the materials may be mixed in any proportion and a product like 'Joiners Glue' may be obtained does not negative the patentable novelty of the Perkins product. **Apparatine has been known for thirty years and was never suitable for or used in wood**

veneering or similar use. It was only after Perkins had discovered the practicability of the *changes in the proportion of the ingredients of the glue,* that his better than animal glue came into popular use. The change of proportions used by Perkins enabled him to secure a glue that was marketable and acceptable to the wood-veneering industry. These **differences in kind** as well as degree resulted in a product more useful than that which had theretofore been made or known. This *product* was not anticipated by Gerard and was patentable. Mineral Sep., Ltd., vs. Hyde, 242 U. S., 261; 37 Sup. Ct., 82; 61 L. Ed., 286. Since the evidence of prior art as to the other patents has been ably discussed by Judge Sanborn, Judge Sessions, and the Circuit Court of Appeals, and very little is new here, it would be needless repetition to repeat it." (Italics ours.)

The defendants in the Standard Furniture Company case contended that the glue was only new and patentable when made by the Perkins two step process or from a particular base, and Judge Cooper said:

"The defendants' contention is that the Perkins patent in suit is limited to glue made by combining the two steps of the Perkins process, viz: (1) the degenerative step to produce a degenerated glue base; and (2) the dissolving step to produce the glue; that glue made in any other way is not infringement. They claim, further, that their glue base is not degenerated by the Perkins first step; and is of high and not of low viscosity, as is the base produced by Perkins first step; that their glue, not being made from the Perkins base, or its equivalent, and therefore, not by the two steps of the Perkins process, is outside the Perkins patent and not an infringement.

The Circuit Court of Appeals in the Solva Case did hold that the claims for the first and second steps as such, taken separately, were invalid. But *the Court, nevertheless, held the plaintiff's patent infringed where, as here, a starch, coming in its commercial state,* or by mechanical mixture of commercial starches, or otherwise, degenerated to a stage *equivalent to that produced*

by Perkins first step, was treated by the second step and resulted in *Perkins glue or its equivalent.*" • • •

"But in the patent in suit it is claimed that raw starches by proper adjustment of conditions may be used without the first step treatment. *Even if the patent did not so claim, doubtless the doctrine of equivalents would protect the patentee, especially in view of the change since the patent of the degree of degeneration in which the cassava starches now come on the market.* Treibacher vs. Chemical Co., 219 Fed., 210, 212; 135 C. C. A., 108. **In the Solva Case and the Michigan cases, most of the bases were not degenerated by step one of the Perkins patent or by any chemical reagent** but were starches already in their commercial state or by mixture with other raw starches in an equivalent stage of degeneration, and all those courts held the Perkins patent valid and infringed." (Italics ours.)

After pointing out that the testimony was conflicting as to whether the base came within the tests of the patent (it was conceded by plaintiff that it did not come within the 9 to 1 boil up test), Judge Cooper says:

"It is manifest that where the raw starch is procured on the market, already *sufficiently degenerated so as not to require the chemical treatment of the first step of the Perkins patent*, or where commercial starches of different grades and kinds may be mixed mechanically to produce the required degree of degeneration, *the defendants cannot with impunity use such base together with the other step of the Perkins process and obtain the Perkins glue.* This was in substance the holding in the Illinois and Michigan cases." (Italics ours.)

Judge Cooper then goes on to further point out:

"Moreover, the Perkins glue product being **the first glue produced from a vegetable base having all of the qualities of animal glue for wood veneering** and being the first vegetable base so used, **has such distinctive characteristics as to make it a clearly distinguishable product.**"

Accordingly, says Judge Cooper:

> "The patent may therefore be considered from the standpoint of its product claims apart from the process claims therein.
>
> In a product patent it is the duty of the Court to avoid, if it reasonably can, a construction confining it to the precise method of making it which the patent happens to show. Dunn Co. vs. Toronto Co., 259 Fed., 258, 261; 170 C. C. A., 326. It is very clear that the product claims are not restricted to the product made by the described process, but covers the chemical individual, however produced. Maurer vs. Dickerson, 113 Fed., 870, 874; 51 C. C. A., 494; General Electric Co. vs. Laco-Philips Co., 233 Fed., 96, 105; 147 C. C. A., 166."

And then, applying the law to the case before him, Judge Cooper said:

> **"Where the Perkins glue as described in the product claims (28, 30, 31) or its equivalent is in fact obtained as described in those claims, those claims are infringed regardless of the degree of degeneration of the base. The question of degree of degeneration or viscosity of the base is material only to the process claims (13 and 38) affected by the disclaimer."**

We submit Judge Cooper correctly stated and applied the law.

Judge Geiger's Decison in the Wisconsin Cases (280 Fed., 728).

The next cases to be decided involving this Perkins Patent were these cases before Judge Geiger. Up to this decision (May 3, 1922) **every decision had been in favor of the plaintiff**, Perkins Glue Co. The nature of the infringement before Judge Geiger was substantially the same as that before Judge Cooper and before Judge Sessions. Defendants

used the Kane base as did defendant Holland Co. in the case at bar.

The two cases against Gould Manufacturing Company, et al., and The Wisconsin Chair Company, et al., were tried together as one case. The trial began on April 26, 1922, and the testimony was concluded at noon the next day—Thursday, April 27, 1922. The plaintiff asked that a later date be set for argument, in order that plaintiff's counsel might have time to study the record and suitably prepare for the argument. This was refused by the Court, Judge Geiger insisting that the oral arguments be preceded with that afternoon, Thursday, April 27th; the result of which was that plaintiff's counsel were unable to give an adequate presentation of the facts as shown by the testimony (the record not having been then even transcribed) or of the law. Plaintiff's time for argument was only a little over an hour. At the conclusion of the arguments, on April 27th, plaintiff requested permission to file a brief, and especially permission to file a list of authorities, all of which was denied by Judge Geiger.

Judge Geiger at that time stated that he would be engaged with other matters on Friday and Saturday, April 28th and 29th. On May 3rd, 1922, Judge Geiger filed his opinion, and we have been informed that at the time the opinion was filed neither the transcript of evidence nor the transcript of the arguments had been filed.

Judge Geiger was the first to read into the product claims in suit the two step process, contrary, we submit, to the law as laid down by this Court. His reasoning, we believe, will not bear close scrutiny.

Judge Geiger Misinterprets the Solva Decision.

Judge Geiger refers to the concluding paragraph of the opinion of the 7th C. C. A. in the Solva Case where they say:

> "The decree of the District Court sustaining the claims * * * of the patent for the final process and resultant product respectively is affirmed."

Judge Geiger construes "resultant" as limiting the product claims to the two step process. We have hereinbefore pointed out that the 7th C. C. A. obviously used the term "resultant," not as a term of limitation, but as a term of identification to distinguish the product referred to (the final liquid glue), from the other product involved (the dry glue base) also called "glue."

Judge Geiger Misconstrues the Product Claims.

Judge Geiger said:

> "If the claims here in suit are thus all-embracing, then why disclaim from any of the process claims?"

and

> "if, as claimed on rehearing, the degeneration may take place or may be obtained by 'intermixture' with other ingredients, then again, why the necessity of claims 10, 12 or 13, why the necessity of the more specific two-step claims."

We are frank to say that we can not see any sense to his proposition. If the product claims are all embracing, what has that got to do with another invention (process claims) which may not be all embracing? We submit the one has no bearing upon the other.

Judge Geiger might just as well have said: "If the product claims in suit are thus all-embracing, why have any process claims at all?" In other words, his theory is that if you claim the product and then also claim your preferred process for making that product, you thereby limit your product claims to a product made only by that particular process; else why have any process claims at all? If your product is covered, no matter by what process it is made, you do not need any process claims, and if you put them in that shows you intended to cover the product only when made by that process.

If this is good law, it means that hereafter a patentee is not justified in putting in claims of different scope, is not

justified in claiming both the process and the product, because if he claims the product and also claims his particular process of making that product, then by claiming his particular process he limits his product claims so that his patent will not cover the product when made by any other process, no matter whether equivalent or not.

Judge Geiger's reasoning is not supported by any authorities, is a novelty in patent law, and is contrary to all precedent.

Judge Geiger Misapplies the Disclaimer.

Judge Geiger goes on to say:

> "If, for example, the product of Claim 28 may be made by the processes noted in claims 10, 12 or 13, then why disclaim from the latter 'any process of making glue excepting where the starch or starchy product is degenerated to the extent described * * * *whereby* the process results,' etc. Surely the disclaimer indicates that if glue, made according to the processes broadly described in claims 10, 12 and 13, resulting in making the product noted in claim 28, then Perkins will not claim it unless the starch *subjected to the process* is degenerated to the extent described."

We submit the disclaimer does not indicate anything of the kind. **The processes which the 7th C. C. A. thought were broadly described in process claims 10, 12 and 13 included, not only the process for making the Perkins veneer glue, but also processes which the Court found old in the making of sizes, pastes, etc.** We submit that the Court did not consider these process claims sufficiently definite to distinguish the process from the old processes of making pastes and sizes. The disclaimer simply limited the process claims to exclude these old processes, and limited them to Perkins' preferred process using a base degenerated to the extent described in the patent. The very fact that the disclaimer did not include, and thereby implicitly excluded, the product claims 28, 30 and 31, shows that there was no intention to limit the product claims; and, as matter of

law, there could be no limitation of the product claims by the disclaimer as we will hereinafter more fully point out.

Judge Geiger, however, says:

> "And when, therefore, the plaintiff in this case conceded, at the opening, that the defendant's base was not within the reservation of the disclaimer, it conceded—in connection with the clear proof in the case—that the defendants in making their glue were in the disclaimed field."

Defendants' *base* in the case before Judge Geiger may not have been within the reservation of the disclaimer—their process may have been different from Perkins' preferred two-step process but their final glue product was concededly the same, and was not in the disclaimed field. Judge Geiger went on to say:

> "It would be simply paradoxical to allow that after exempting to the public the right thus to process (see for example claim 10) **every** resultant product was still within the protection of claim 28."

The trouble with this is that the plaintiff did not exempt to the public "every resultant product. It did not exempt to the public the right to process as described in Claim 10 and obtain the good as animal veneering glue from starch, but only the right process as described in Claim 10 **when the resultant product was something different,** as for example, a size or paste or the like. If process claim 10 had been cancelled altogether, it could not be legitimately said that plaintiff disclaimed everything and that defendant had the right to make the product claimed in the product claims which were retained and held valid. The failure to perceive this distinction was another of Judge Geiger's fundamental errors in law in the case.

Judge Geiger Misconstrues the Result in the Solva Case.

Judge Geiger says:

> "If the result in the Solva Case is not as Judge Sanborn states it; if, notwithstanding the language of the Court, any starch glue, good-as-animal glue, is within the Perkins monopoly, then the entire patent, as Judge Sanborn considered and upheld it, is now reclaimed, not only from the decree of the Appellate Court but also from the plaintiff's express disclaimer."

This proceeds, first, on the erroneous theory that the 7th C. C. A. held the starch glue as good as animal glue old and unpatentable; and, second, that plaintiff disclaimed the starch glue as good as animal glue, as a product; whereas, we submit, the fact is that the Appellate Court did not so hold, as we have previously explained, but, on the contrary, held it to be new and patentable, and the plaintiff did not disclaim such glue but merely limited certain process claims without limiting the glue product claims.

Judge Geiger was unable to distinguish between process invention and the glue product invention. He could not grasp the fact that there were two or more inventions covered by separate groups of claims. He ignores the law as laid down by this Court in Rubber Co. vs. Goodyear, discussed hereinafter. He treats the whole patent as being merely for the Perkins preferred process, for he next says:

> "True, in considering two-step processes, it is entirely proper to assert that an alleged infringer equivalently followed one or the other step. But after the Court of Appeals expressly held that each step per se was old, that *their combination exhibited the patentable novelty,* it was no longer possible for Perkins to claim that *each step* equivalently comprehended the other."

Judge Geiger in his haste and under pressure of work, evidently did not examine the *Solva* record, a copy of which was left with him, because he would have found that most of the Solva Company's base was not degenerated by chemicals, but was raw starch just as it came on the market, and was used to make glue by the Perkins second step without first giving the base any first step treatment whatsoever.

Yet the Circuit Court of Appeals in the Solva Case nowhere holds that this is not an infringement. **Judge Geiger does not assume to find that there was any difference between the defendants' glue and the glue of the patent.** Judge Geiger's decision is based on the erroneous assumption that his own Circuit Court of Appeals limited the whole patent, not only the process, but the product claims as well, to a glue made by the specific two-step process.

Judge Geiger Had an Erroneous Idea Regarding the Law as to Anticipation.

Judge Geiger says:

> "Plaintiff's witness, Grosvenor, admitted, though somewhat reluctantly, that though his experimental use of Gerard or Dornemann gave an unsatisfactory product, he would not deny that had he practiced such processes by using **defendant's** base, he would have had defendant's glue as a resultant."

In the course of the cross examination of Dr. Grosvenor before Judge Geiger, the following occurred (p. 172):

> "Court: Then you do not conclude, Doctor, that you made a test which excluded the possibility of Marsden's method being practiced so that there could be a resultant veneering glue?
>
> A. May I inquire, Your Honor, what is meant by Marsden's method?
>
> Court: His disclosure. You did not take Marsden and try out the varient hypotheses that he suggests in his specifications?
>
> A. No.
>
> Court: Well now, to begin with, are you ready to tell us what might have been the result, following Marsden, taking Kane's vegetable glue, if that is what it is called, as a beginner, and made variations such as Marsden suggests in respect to the quantity of water? You are not prepared to say that you might not have gotten a very strong glue, available for veneering purposes?

A. I might *not* had I gone through the range of experiments."

Now "hypotheses" are mere suppositions, things not proved, and the word has no application to Marsden's specification, but the witness evidently thought the Court was referring to Marsden's statement to the effect that the proportion of water might be varied from the 7 parts specified, and that the Court was asking him if he had tried *all* proportions of water. To this the witness, of course, answered, "No." Dr. Grosvenor had tested Marsden with the 7 parts of water specified by Marsden and obtained a product having the characteristics described by Marsden. This product was found to be entirely different from Perkins and defendants. **There was no suggestion in the Marsden patent that any different product such as veneer glue could be obtained if the proportion of water was reduced from 7 to 3 parts** and the witness was, therefore, not justified in testing out Marsden with any such proportion.

The last question asked by Judge Geiger is self-contradictory for it first assumes that Marsden's description is to be followed and then assumes the Kane base is to be used. Marsden's description does not say anything about the Kane base or any other similar base, but the witness was forced to assume that he was to take the Kane base and dissolve it in various proportions of water and state whether he would have gotten a veneer glue, and the witness answered that even under such unwarranted assumptions he "might not" have gotten it. If he did not use the critically small amount of water and did not continue the stirring with heat after the caustic had been added and dissolved the Kane base, he might very well not have gotten it.

Dr. Grosvenor was further questioned by Judge Geiger, as follows (p. 183):

"Suppose a man has before him Gerard, Dornemann and Marsden, as witnesses here testified yesterday, and

they take Kane's vegetable glue and start out to mix and to agitate, and they have a resultant product which we will assume is suitable for veneering purposes, or is a strong glue. What is there in Perkins, when you get away from the specific formula that he points out, that enables you to say that these workers followed Perkins rather than the patents that were before them?

A. The indications of the desired end to be sought, and the application of the material to that end; the proportions of water desirable to use, and the adaptation of the conditions of mixing, or the degree of starch, the kind of starch selected, preferably cassava, to the end to be obtained.

Court: Which of those things enumerated are **forbidden** by the three guides that these workers had before them?

A. I think none of them is forbidden.

Court: Well, is any method that they pursue, forbidden?

A. I think none is forbidden, although suggestions to the contrary are frequently made."

According to Judge Geiger's theory if a prior patent says, "By taking suitable ingredients and varying proportions I can make anything under the sun," then that patent is an anticipation of everything. He seems to have thought that if the prior art does not "prohibit" or "forbid" the alleged invention it must be anticipation thereof. But anticipation is to be determined not by what the prior art *prohibits* or *forbids* but by what it **discloses**. A prior reference to defeat a patent must point out the subject matter claimed by the patent in such unmistakable manner as to enable those skilled in the art to recognize and utilize it.

Judge Geiger further says:

"Therefore, it is not possible, after crediting Perkins with discovering a correct formula, one that is 'just right' to assume that every formula which he discarded and, that every product made by a discarded formula, is none the less within the monopoly; nor to extend the latter over products resultant upon the practice of Gerard or Dornemann, even though

the later failed or were not interested in apprehending, the efficacy of their processes to produce a veneering glue satisfactory to others than to Perkins."

The product claims do not cover every product made by a discarded formula. Nor is it contended that any discarded formula is within Perkins' monopoly. The discarded formula (broad process claim) was one which was so vague and general that many different things could have been made thereunder, not only veneer glue, but also thin watery sizes and pastes. We have pointed out that such formulae were discarded as **might** make something beside a vegetable veneer glue. Likewise, plaintiff did not attempt to extend its claims over the products resultant upon the practice of Gerard or Dornemann; the practice of Gerard and Dornemann results only in relatively watery sizing materials; but when (as defendants did there and defendant does here) one changes Gerard and Dornemann in ways not specified in the Gerard and Dornemann patents, and thereby obtains the good as animal glue for veneering first discovered by Perkins and not attained or contemplated by Gerard and Dornemann, then we contend such a one is no longer making the Gerard and Dornemann product but is making the glue product of the patent in suit.

Decision of Second C. C. A. in the Standard Furniture Co. Case (287 Fed., 109).

This was the next decision rendered affecting the patent in suit. It was on defendants' appeal from Judge Cooper's decision hereinbefore discussed.

The decision of the 2nd C. C. A., while professedly following the decision of the 7th C. C. A. in the Solva Case, is, we submit, like the decision of Judge Geiger, directly opposed thereto. The 2nd C. C. A. was undoubtedly greatly influenced by Judge Geiger's opinion and **similarly misinterprets the Solva decisions.**

The Second C. C. A. say (287 Fed., 110):

"Sanborn, District Judge, upon receipt of the mandate in the Solva Case, ruled that only those claims remained valid after the decision of the higher Court which included the two steps (of the process) and only when their use results in Perkins' glue, together with such additional claims as count on such glue as a product of the two steps and no others," i. e., no other claims.

As previously pointed out this statment of Judge Sanborn was not a statement of limitation of the product claims (which claims he was not called upon to construe) but a statement of reference to distinguish the **final glue product** claims from the **intermediate base product** (called glue) claims, which base was the product of the first step.

The 2nd C. C. A. Errs as to Law Respecting Plaintiff's Right to Appeal.

The Second C. C. A. say:

"We are not advised that any appeal was ever taken from this interpretation of the ruling of the Circuit Court of Appeals" in the Solva Case.

But the product claims were the only claims plaintiff particularly cared about and the decree held those valid and infringed as plaintiff had prayed in its bill of complaint. Plaintiff could not appeal from such holding in its favor, no matter what Judge Sanborn's reasons were for holding them valid. No appeal lies from a Court's *opinion and reasoning.*

The 2nd C. C. A. misconstrued and misapplied the disclaimer.

The Second C. C. A. say:

"Subsequently to such ruling, however, this plaintiff disclaimed, inter alia, from claims 13 and 38 of the reissue, 'any process of making glue excepting where the starch or starchy product or carbohydrate subjected to the process is degenerated to the extent described in' the reissue. For this procedure, see 280 Fed., 729, 730," i. e., Judge Geiger's opinion.

They, like Judge Geiger, assumed that the disclaimer applied to the product claims 28, 30 and 31, as to which no disclaimer was filed. The absurdity of the assumption is more fully discussed hereinafter.

The 2nd C. C. A. errs as to the law.

The Second C. C. A. finds that the defendants so-called raw starch base there used (like defendants' base here) "is the exact equivalent of what Perkins made by his first process" but they say:

> "This product of nature cannot, per se, be covered by any patent, and it certainly is not the result of any process devised by Perkins."

Here the 2nd C. C. A. seems to have been under the impression that it was the base which plaintiff was claiming as the invention. They go on to say, however:

> "if we accept the decision in the Solva Case as interpreted by Sanborn, J., and apparently acquiesced in by plaintiff, there can be no infringement, because this defendant is not using a glue which is the result of both steps of Perkins' patent."

This is nothing more than reading into the glue product claims, the features of the two step process. The facts there and here did not warrant any such **mutilation** of the claims by construction and the patent law does not provide for any such twisting of a claim from a claim to a defined product into a claim for a product made only by a two-step process which process is in no way referred to in the claim. We will discuss this more in detail hereinafter.

The Second C. C. A. further says:

> "In our opinion this record shows that some accident of nature, or the skill of agriculturists, has produced and put on the market a cassava starch of that degree, of viscosity, etc., which Perkins achieved by his degenerative process. With such a starch, defendant, by using methods as old as Gerard, has produced a sub-

stance which plaintiff says is Perkins' glue. Perhaps it is in result; but it cannot be the same thing in a patentable sense, because **nature has supplied the base** and Gerard the process."

This is absurd, for it is well recognized that if one combine two features (separately old) to produce a new result, it is patentable.

Inasmuch as in the Solva Case the Court held that the **base** was old as found in prior patents; certainly no difference was there predicated on the base, and what difference can it make whether the base was unpatentable because found in a prior patent, as found in the Solva Case, or because found in nature, as stated by the 2nd C. C. A. (also in the Solva Case)? In each case the base is lacking in novelty. It seems to us an absurdity in law and in fact for the learned Judge of the Second Circuit to say that the novelty of the **glue** product could be affected in any way because of the fact that the base from which it is made is found to be old in nature as distinguished from being found to be old in the prior art as a manufactured product. The learned judge found "**we agree that Perkins disclosed a new vegetable glue**, i. e., a manufactured product," but he limits the product claims to a product made by two commercial processing steps because he finds that the intermediate product resulting from the first of those commercial processing steps is a product to be found in nature.

We submit that there is no authority or foundation in law or in fact for any such reasoning or conclusion and we respectively submit that it is an absurdity on its face. Why should a patentee whom the learned Judge concedes produced a new kind of glue (novel in itself) by two manufacturing process steps be denied the monopoly of that identical product because in the light of his teachings to the art, nature or the farmer has been able to deliver to manufacturers, the base to which the second manufacturing step is applied to produce that product so that they are not required to carry out the first step.

Anyway defendants, in the 2nd C. C. A. case, did not use Gerard's method or any other method disclosed in the prior art. Like defendants here they used less than 3 parts of water, instead of over 5 parts of water as specified by Gerard.

The 2nd C. C. A. says:

> "The only reason that ever justified any Court in holding Perkins' product patentably new was by finding it the peculiar result of a combination of two processes severally old."

As previously pointed out a careful study of the decision in the Solva Case (referred to) in the light of the facts, shows that the Solva decision did not hold the product patentably new because it was the result of a combination of two processes severally old, but because of the difference in the amount of water which produced a materially different glue.

The 2nd C. C. A. found that the Standard Furniture Company's base "is a natural product," one which "some accident of nature, or the skill of the agriculturalists, has produced and put upon the market" "of that degree of viscosity, etc., which Perkins achieved by his degenerative process"; and the glue which the defendant made therefrom the Court assumed to be not only **"the equivalent of Perkins' product,"** but the "same thing." Under such a state of facts the law is that there is infringement and the 2nd C. C. A. erred in holding no infringement.

The 2nd C. C. A. go on to say:

> "There are some manufactured products so broadly new that the **same thing** however produced may be within the inventions broad range of equivalents. This is a question of fact; but, on the prior art and the evidence herein as to modern cassava starch Perkins' vegetable glue is not such a product."

The learned Judge of the Second Circuit here assumed that defendants' glue was the **same** as Perkins and yet did

not come within the patent, not because that glue was old or did not involve the invention, but on the ground that **one of the ingredients** from which it was made may be found in nature. It seems to us absolutely absurd to say that it makes any difference whether the base was old in nature or old in the prior art as a manufactured product (Gerson & Sachse). On the same reasoning the absurd result is reached that the **patent can not cover the glue made from the Perkins degenerated base,** because that preliminarily artificially degenerated base was old in Gerson & Sachse.

We submit that the decision of the 2nd C. C. A. is totally lacking in logic and is unsound on every point.

The Decision of the Seventh C. C. A. in the Wisconsin Cases (292 Fed., 596).

This was on plaintiff's appeal from Judge Geiger's decision hereinbefore discussed. While the appeal was heard in the same Court which heard the Solva Case appeal, none of the Judges were the same.

The 7th C. C. A. misconstrues the Solva decision.

After referring to the decision of the Second C. C. A. they say:

> "Though the decision in the Solva Case is not res adjudicata between the present litigants, we find no difficulty in following it on the principle of stare decisis. After reversing that part of the decree which sustained the claims for a glue base process and product and for the so-called second process as such, the mandate reads:
>
> > 'And that part of the decree which upholds the claims of the patent for the final process (that is, the combination of the processes numbered 1 and 3 above) and the resultant product respectively is affirmed.'
>
> It seems to us that the Court intended to limit the valid product claims to the product that resulted from practicing the valid process claims. Such was the in-

terpretation put upon the opinion by Judge Sanborn when the case was returned to his Court to execute the mandate."

It has been already pointed out that the use of the term "resultant" by the C. C. A. in the Solva Case and the equivalent expression by Judge Sanborn was not by way of limitation, but for purposes of reference merely, i. e., to distinguish the final glue product (referred to as the resultant of the two steps) from the *base* product which was the resulant of the first step (the term "glue" being applied in the trade to both products).

We submit that the Seventh C. C. A. in the last case simply misconstrued the decisions in the Solva Case.

The Court Misapplies the Disclaimer.

The Seventh C. C. A. in its later decision then goes on to say:

> "Following the final decree of Judge Sanborn, appellant filed in the Patent Office a disclaimer of all the claims for the glue base and all the claims for the process of making the glue base; and appellant further disclaimed 'from claims 9, 10, 11, 12, 13, 14 and 38,' which cover the second process, 'any process of making glue excepting where the starch or starchy product or carbohydrate subjected to the process is degenerated,' by use of the first process, 'to the extent described in the said patent.' In our judgment this disclaimer is a conclusive bar to appellant's attempt to monopolize a product, which does not depend at all for its existence upon the use of appellant's valid process claims."

It seems to us simply absurd to say that this disclaimer from process claims 9, 10, 11, 12, 13, 14 and 38 was in fact a disclaimer from the product claims 28, 30 and 31 which product claims were not mentioned in the disclaimer in any way. Of this more hereinafter.

The Seventh C. C. A. next says:

> "In addition to the foregoing reasons, we may say that our view of the prior art leads us to the conclusion

that the only patentably novel thing that could be attributed to Perkins' labors was the combination of two processes which severally were old, and that no product claims could validly be given a broader sweep of monopoly than inheres in the combined processes."

The Court cited no prior art sustaining this conclusion, and we believe there is none. As previously pointed out the "combination" idea was old in Gerson & Sachse. It was the use of the **critically small amount of water** with a suitable starch which resulted in the new good as animal glue for veneering, and this whether the glue was made by two steps or one step.

Judge Sessions Reopening and Reversal of His Prior Decision.

After the coming down of these decisions by the Second C. C. A. and Seventh C. C. A. the defendant in this case moved to reopen the same, because of these decisions and also for the purpose of introducing the Gerard Belgian Patent in evidence. The Gerard patent, as before pointed out discloses the old "apparatine" formula for making a size. The same "apparatine" was before the Courts in the Solva Case in the form of the corresponding British Patent and another publication. Judge Sessions granted the motion to reopen and after an oral hearing in which he expressed the opinion that he should now follow those decisions, he entered a final decree (Rec., 637) holding **defendant's Solva and International glue to be infringing**, but holding the **Kane base glue to be non-infringing**, thereby reversing his previous decree which held the Kane base glue to be an infringement. It was from this final decree holding the Kane base glue to be non-infringing that plaintiff appealed to the 6th C. C. A. below.

While Judge Sessions, in his final decree was attempting to follow the recent decisions of the 2nd and 7th C. C. A.

the said decree is, in effect, at variance therewith in the following respect.

The recent decisions of the 2nd and 7th C. C. A. say there can be no infringement unless the glue is made by the two step process (a first starch degenerating step and a second starch dissolving step). Judge Sessions, however, held the glue to be an infringement which was made from the International Process Co. base, which base was not degenerated by the Perkins first step but was a mixture of starches. Defendants did not appeal from this ruling.

ARGUMENT.

The Product Claims in Suit are Neither Anticipated nor Limited by the Prior Art and Defendant's Doings are not Justified by the Prior Art.

It is plaintiff's contention that Perkins was the first to discover (1) that from starch there could be made a glue having the essential properties of animal veneering glue, and (2) that such a glue could be composed of starch not degenerated as far as soluble starch or dextrine, dissolved with caustic, in the critically small amount of water, i. e., about 3 parts or less.

Others had dissolved **soluble** starch and **dextrine** in about 3 parts or less of water and obtained only a weakly adhesive mucilage or paste. Others had dissolved starch not degenerated to soluble starch or dextrine in a much **greater proportion** of water (from 5 to 20 parts) and obtained ony a weakly adhesive size for cloth finishing and the like.

Before Perkins no one had combined the critically small amount of water (about 3 parts or less) with a non-dextrinized or non-solubilized starch. Perkins did this and was the first to obtain a starch glue having substantially the adhesiveness, cohesiveness, spreadability and other essential properties of animal veneering glue.

The glue of the patent is clearly differentiated from the prior art by the characteristics (1) that it is a starch glue having substantially the properties of animal veneering glue, (2) that it is a wood glue formed of starch by union therewith of about 3 parts or less of water and caustic, (3) that it is a wood glue containing starch as a base dissolved without acid in about 3 parts or less of water and being viscous semi-fluid and unjellified. These differentiations are specified in the claims in suit.

We submit all these characteristics are concededly present in defendant's glue in question.

We also understand defendants' counsel to concede that the prior art does not anticipate, but such concession is based on their unwarranted mental reservation that the product claims cover the product only when made by the Perkins **preferred process,** using as a base a starch first degenerated to a point to respond to all the so-called tests (for the base) mentioned in the patent. In this way, **they seek to avoid the appearance of raising an issue of anticipation and to take on the appearance of raising only an issue of infringement; but on a normal and usual interpretation of claims 28, 30 and 31, infringement is clear and defendant's attempted justification of its product by the prior art is an issue of anticipation pure and simple.**

It may be quite true that the defendant follows the prior art to some extent, but it is only in so far as it uses starch, caustic and water to produce an adhesive, for defendant uses a starch not degenerated to soluble starch or dextrine and dissolves this with caustic in about 3 parts of water or less and such a glue is not suggested by the prior art. Gerard, Dornemann, etc., used proportions to produce a watery sizing material or a paper paste. Defendant uses specifically different proportions and conditions and produces a radically different product, i. e., veneer glue, like Perkins.

Defendant contends that it uses a base not degenerated to respond to the 9 to 1 boil up test and 170° test and

that Gerard, Dornemann and Marsden also made an adhesive from starch not degenerated to respond to the 9 to 1 boil up test and 170° test, and therefore it is doing what the prior art directs and is free of infringement. On the same erroneous theory it might be as truly said that Gerson & Sachse disclosed an adhesive made from a base degenerated to within these tests, and, therefore, the patent can not legitimately cover glue made from Perkins' preferred base. *Defendant's argument, therefore, can only lead to the conclusion that there is nothing patentable whatsoever in the patent in suit; and indeed that is the logical conclusion of the reasoning found in the recent decisions of the 2nd C. C. A. and 7th C. C. A.*

It is, of course, conceded that defendant is not using exactly either Gerard's sizing with five parts of water or Dornemann's even more watery sizing. It appears to be defendant's contention, however, that if it substantially changes the proportion of water, using one-half as much as Gerard suggested and one-fifth or one-sixth as much as Dornemann assumed, and adjusts the conditions of mixing, etc., it is still following Gerard and Dornemann and getting their product, and, in support of this, it urges that Dornemann mentions no specific amount of water and that Gerard states that the proportions may be varied, although Gerard specifically says that "in order to obtain an industrial and commercial product *it is necessary not to depart too much* from" the 5 to 1 proportions, which is almost twice too much.

We submit it is absurd to say that defendant is following prior patents unless it makes substantially the same adhesive product which the prior patentees sought and intended and described. Since they all described a watery sizing adhesive or paste and since defendant does not make or use any such adhesive but on the contrary makes and uses a wood veneer glue having entirely **different characteristics and unexpected properties**, constituting not merely differences in degree but differences in **kind**, the defendant cannot fairly or properly say it is following the prior art.

Defendant would have us believe, for example, that because Dornemann mentioned no specific proportions, he thereby anticipates everything, that could or can ever be made from starch, alkali and water, no matter how unexpected or how useful or how novel the result and whether an old art is revolutionized or not or a new art begun.

We submit, such a line of argument is absurd. **Defendant cannot rely on the omissions and indefinite statements in prior patents either as anticipations or as justifying their own acts.**

In the case of Eames vs. Andrews, 122 U. S., 44, 30 L. Ed., 1064, the often-cited driven well case, this Court had before it a large number of patents and publications alleged to anticipate the patent in suit. It sustained the patent, however, quoting from its prior decision in Seymour vs. Osborne, 78 U. S., 516, the following language:

> "Mere vague and general representations will not support such a defense as the knowledge supposed to be derived from the publication must be sufficient to enable those skilled in the art or science to understand the nature and operation of the invention and to carry it into practical use."

This doctrine has long been followed by the District Courts and Circuit Courts of Appeal. For example the Court in Warren vs. Owosso, 166 Fed., 309, 92 C. C. A., 227, said:

> "The patents relied upon as anticipations * * * are both lamentably lacking in instruction as to the *proportions* of mineral ingredients of the different grades. * * * Mere *vague and generel representations* in a foreign patent will not support the defense of anticipation." (Italics ours.)

In Westinghouse vs. Saranac, 108 Fed., 226, the Court had before it the Stanley transformer patent, and said with regard to prior art publications alleged to anticipate a patent claim, that they must be so complete in details as

not to require "independent investigation and experiment" "to explain obscurities and supply omissions."

In Hess-Bright vs. Standard, 177 Fed. Rep., 437, the Court said (citing McMichael & Wildman vs. Ruth, 128 Fed., 706, 63 C. C. A., 304; 3rd C. C. A.):

> "The fact that an expert, with a patent before him, might be able to build up the structure covered thereby, by selecting and adapting appliances theretofore known, does not overcome the presumption of invention arising from the granting of the patent, where neither the same combination in its entirety nor the same mode of operation, had previously been described or known."

And the Court in Westinghouse vs. Great Northern, 88 Fed., 258, 263, 31 C. C. A., 525 (2nd C. C. A.), said:

> "• • • The prophetical suggestions in English patents of what can be done, when no one has ever tested by actual and hard experience and under the stress of competition the truth of these suggestions, or the practical difficulties in the way of their accomplishment, or even whether the suggestions are feasible, do not carry conviction of the truth of these frequent and vague statements."

We submit that the 6th C. C. A. below, correctly disposed of the matter where they said (Rec., 652)

> "If the right of a prior inventor to vary proportions, sizes and relations in his article as much as he pleases barred a patent to a subsequent worker who did make the variation which the first man had not done, many familiar decisions are wrong. In the Minerals Separation case, 242 U. S., 261, and 250 U. S., 336, the earlier inventors had used oil in varying quantities, and had the right to use less than one per cent. The patentees first observed that with less than one per cent. they got a much better result. Eibel's predecessors (261 U. S., 45) had flowed the fluid paper pulp down a screened incline with an elevation of three inches. He

raised the upper end nine inches, making the incline twelve instead of three, and thereby made as good paper at a faster rate. He did not merely observe that the steeper the hill the faster water would run down it; he saw that an existing trouble would be cured by a faster flow. So with Perkins. He did not merely observe that if he used less water than Gerson and Sachse he would get a thicker paste; he saw and developed the reason why he could use a very little water, and get something never before obtained,—a starch-base wood and fiber glue. His conception and development of the interactions of his selected starch base and the alkaline solvent with the water minimum, and his creation thereby of a new product following years of commercial need for and unsuccessful effort to devise such a product, followed by the general adoption by the industry, seem to us to meet and satisfy the universally accepted tests of invention."

The rule of law as to prior art references is even more strictly applied in the case of chemical patents.

In Naylor vs. Alsop, 168 Fed., 919; 94 C. C. A., 315 (8th C. C. A.), the Court said:

> "It should also be borne in mind in considering this subject that reasoning by analogy in a complex field like chemistry is very much more restricted than in a simple field like mechanics. This distinction has been frequently recognized by the Courts."

The Court in Kuehmsted vs. Elberfield Co., 179 Fed., 701; 103 C. C. A., 243 (7th C. C. A.), discusses the impossibility of chemists predicting what a product of a process will be.

General Co. vs. Laco Co., 233 Fed., 103; 147 C. C. A., 166 (2nd C. C. A.); adopting Judge Mayer's opinion:

> "Chemistry is essentially an experimental science, and chemical prevision is as impossible to-day, in spite of the accumulation of the great knowledge, as it was in former times."

The 6th C. C. A. discussing whether there was invention in taking this known starch base and dissolving it in the critically small amount of water with caustic, held that there was, saying (Rec., 652):

> "Patents are commonly granted, and sustained, for just that type of selecting and uniting mechanical elements, when they bring a long-sought and strikingly useful result which gets wide acceptance and use. *Much more should it be so with chemical reactions, often not fully foreseen.*" (Italics ours.)

Perkins' Change in Water Proportions was not a Mere Difference in Degree.

It was not a mere difference in degree because he obtained a **new product** (new in kind), a starch glue having the essential properties of animal veneering glue, which was not known before, and this new product was new in and of itself and revolutionized the veneering industry by substantially supplanting animal glue therein. Perkins' **process** may have differed from prior processes mainly in degree (amount of water) but the **product was different in kind** for it is not usable for the purposes for which the prior art products were used and they are not usable for veneering.

Walker on Patents (5th Ed., p. 58, Sec. 41a):

> "For example, Charles Goodyear invented soft vulcanized rubber, consisting of crude India rubber and sulphur in the proportion of one part of sulphur to five parts of rubber, mixed and subjected to a high degree of heat; and afterward Nelson Goodyear invented hard vulcanized rubber, consisting of equal, or comparatively equal, parts of sulphur and crude rubber mixed and subjected to a high degree of heat. In this case, the change in proportion of the two materials resulted in two entirely distinct articles, having entirely distinct modes of operation and functions; and the later article was well held to be an invention."

Similar alleged differences in degree have been sustained as patentable by this Court. Eibel Process Co. vs. Paper Co., 261 U. S., 66, 67; 67 L. Ed., 534.

This doctrine has likewise been long followed by the lower courts. For example in Toledo Computing Scale Co. vs. Computing Scale Co., 208 Fed., 410; 125 C. C. A., 622; (7th C. C. A.) the Court held the patent valid and infringed, saying:

> *"Defendant insists, however, that making the drum lighter was merely a matter of degree. Of course the lessening of weight is a matter of degree; but it is not necessarily merely a matter of degree.* **If the change converts failure into success, something more than a matter of degree is involved.** Unreliable automatic computing scales, in the practical art, are no scales at all. A reliable automatic scale was a new mechanism, a creation, just as in the Asperin case (Kuehmsted vs. Farbenfabriken of Elberfield Co., 179 Fed., 701, 103 C. C. A., 243) this Court held that *the reduction of the amount of impurities in a compound theretofore known to chemists, whereby a deleterious substance was converted into a valuable medicine, was not merely a change of degree, but was a change of kind, producing a new article of commerce."* (Italics ours.)

If the difference in product resulting from the difference in amount of water had been a mere matter of degree, we submit the Court would (in the Solva Case) have held all the finished glue product claims (including 28, 30 and 31) invalid because it held that that was the only difference over the Gerson & Sachse patent, which patent disclosed a starch base degenerated, as they held, to the same stage as Perkins, but which, however, was dissolved in 20 parts of water with caustic to make a sizing instead of 3 or less parts of water to make veneer glue.

From the knowledge in 1908 (when the Perkins application was filed) of the complexities of starch chemistry and the multitudinous products that may be produced therefrom, it was far from obvious to those skilled in the art

that, by changing the proportion of water from those mentioned by Marsden, Gerson & Sachse, Gerard or Dornemann, a new product could be produced from any starch, which product would have substantially the adhesive power and other essential properties of animal veneering glue, as distinguished from sizes, pastes and the like.

Defendant, we believe, admits that the prior art patents relied upon do not *specify* the Perkins critically small amount of water (about 3 parts or less) but as to this they say they are entitled to use **their** "judgment"—but in truth it was **Perkins'** judgment and Perkins' invention based thereon that they were using to reduce the amount of water used by the prior patentees until it is like Perkins, and until they get glue like Perkins and unlike that contemplated by the prior patentees; and when they thus, get Perkins veneer glue by making these changes and departures from the prior art, they say they are still operating according to the disclosures of this prior art and not according to Perkins.

The law, we submit, is well settled to the contrary.

A Prior Patent to Anticipate or Limit One of Later Date Must Do so Without Assistance from the Latter.

In Johns-Pratt Co. vs. Snow, 212 Fed., 173, 176, the Court said:

> "The rule is well established that a prior patent to anticipate one of later date must do so 'wtihout assistance from the patent' alleged to be anticipated."

Citing Cohn vs. U. S. Corset Co., 93 U. S., 366; 23 L. Ed., 907, where this Court said:

> "Unless the earlier printed and published description does exhibit the later patented invention in such a full and intelligible manner as to enable persons skilled in the art to which the invention is related to comprehend it without assistance from the patent, * * * it is insufficient to invalidate the patent."

This doctrine has likewise been followed in many cases. For example the Court said, in Ludwigs vs. Payson Mfg. Co., 206 Fed., 60, 64; 124 C. C. A., 194 (7th C. C. A.):

> "The Thompson patent is not an anticipation; and this virtually is confessed by Ludwigs' reliance on Thompson modified by omitting the catch.
>
> But the modified Thompson structure is not a part of the prior art. Topliff vs. Topliff, 145 U. S., 156, 161, 12, Sup. Ct., 825; 36 L. Ed., 658. It has been produced in the light of Payson's teachings. It is a subsequent art brought into being in the endeavor to defeat Payson. * * *"

The Court said in the Aspirin Case, 171 Fed., 887, 889 (affirmed 179 Fed., 701):

> "In other words, they added Hoffman's discoveries to those of the prior art in order to attempt to demonstrate that such art contains everything discovered by Hoffman." But **"It was he** (Hoffman) **and not** Kraut (prior patentee) or **the other famous chemists of the prior art who gave to the world this valuable remedy.** That the law is with the complainant from the facts stated seems to me to be clear." (Many cases cited.)

It remained for Perkins, after tireless effort, to produce this new glue product for the trade. It was badly needed in the trade, yet neither Kane who spied on Perkins' factory and who is back of the defendants here, nor anyone else, was able to produce any vegetable veneer glue from the teachings of the prior art. It was only after Perkins' disclosures that they were able to produce it by **any** method. Why at that time could they not get it with their "judgment?" The answer is simple. Perkins' discovery had not been disclosed to them.

Under the Law the Product Claims Should Not Be Limited to the Process Described.

To do so would be a grave injustice, for **it is the product that the public is interested in,** and not the process. Also we submit the law is settled that no Court has a right to alter the patent grant. The patent is a contract between the Government and the patentee. The contract was made between Perkins and the Patent Office, and no one can doubt that these product claims, when the patent was granted, were intended by both parties to cover the product irrespective of the two-step process and irrespective of the particular base Perkins preferred to use. The two-step process and the different steps and the base were claimed in separate claims. Yet the 2nd C. C. A. and 7th C. C. A. have deliberately read into the glue product claims, process features which are not there and which were never intended to be there. This is contrary to well settled law.

This **Court** in McCarty vs. Lehigh Co., 160 U. S., 110, 116; 40 Law Ed., 358, 361, said

> **"we know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement."**

We submit this is axiomatic.

The *words* in a claim may be interpreted where they are reasonably capable of different interpretations in order to determine what the language means, but we submit elements or features not referred to in a claim can not legitimately be read into the claim for any purpose. This rule, laid down by this Court has been followed in many cases.

Defendants' attempt to read into the glue product claims limitations as to the base, makes these claims of the same effect as the narrower process claims. This is not legitimate.

In Mast, Foos & Co. vs. Dempster Co., 82 Fed., 327, 333; 27 C. C. A., 191 (8th C. C. A.), the Court said:

"Any construction which would read into the first claim these additional elements renders it useless and unmeaning, because it gives it the same effect as the claims which follow it, and in this way shows that neither the patentee nor the patent office contemplated such an interpretation. The appellee has appropriated the essential feature of this invention—the internal toothed spur-gear in combination with the pinion, pitman, wind-shaft, and pump-rod of a windmill. The terms of the first claim of the patent are plain and unambiguous. They need no construction, and, when taken in their ordinary signification, they fully describe and clearly claim the combination which the appellee is using. It ought not to escape here, because it does not use subordinate or unimportant elements of combinations described in other claims, which are undoubtedly omitted from this claim that the inventor might more perfectly secure the essential element of his invention. Manufacturing Co. vs. Wharton, 28 Fed., 189, 190; Tondeur vs. Stewart, Id., 561, 564; Coupler Co. vs. Pratt, 70 Fed., 622, 629."

And in Los Angeles Organ Co. vs. Aeolian Co., 143 Fed., 880, 885; 75 C. C. A., 88 (9th C. C. A.); the Court said:

"where a patent contains several claims, some of which are limited to details; the others are, prima facie, not to be restricted by insisting that they contain, as necessary elements, the particulars which are specifically covered elsewhere. The general rule is as stated by the Court in Risdon, I. & L. Works vs. Trent (C. C.), 92 Fed., 375, 388, that 'Infringement cannot be avoided by reading into a broad claim of a patent specific devices claimed in narrower claims of the patent.'"

In Bresnahan, et al., vs. Tripp Co., 102 Fed., 899, 900, 43 C. C. A., 48 (1st C. C. A.), the Court said:

"if some of the claims are limited to details, those which remain are prima facie not to be fettered by insisting that they contain, as necessary elements, the particulars which are specifically covered elsewhere."

In view of the above we are at a loss to understand how anyone can understandingly and legitimately say the glue product claims in suit are limited to the two-step process or any other features of the process or base claimed only in other claims of the patent in suit.

Walker on Patents (5th Ed., Sec. 176, p. 221) says:

> "To use the words of the Supreme Court, 'the claims measure the invention.' "

And (Sec. 339, p. 423):

> "Whoever infringes any one claim of a patent infringes the patent, whether or not it contains other claims which he does not infringe."

And especially is it true that a *product* claim should not be limited to the described *process.*

Of course, if the claims *on their face* state that the product is claimed only when made by a certain process, or "substantially according to the process described," then no product will infringe except when made by that process. Otherwise they are not limited to the process.

In Kuehmsted vs. Elberfeld Co., 179 Fed., 701, 103 C. C. A., 243, the 7th C. C. A., had a similar product patent before it. The evidence did not disclose what process defendant used to make it. The Court found infringement on the identity of the two products irrespective and independent of the process by which the defendant made its product.

Walker on Patents (5th Edition, Sec. 176, p. 223) says:

> "A process and its product, though they may be secured by separate claims in one patent, cannot be covered by one claim. 'A new product having definite characteristics by which it may be identified and which distinguish it apart from the process by which it was produced may be properly described by such characteristics and when so claimed and described the claims are not limited to the process.' "

In General Electric Co. vs. Laco-Philips Co., 233 Fed., 96, 105, 107; 147 C. C. A., 166 (2 C. C. A.), the suit was on certain product claims. The plaintiff's patent disclosed two processes for making the product but defendant made that product by a wholly different and subsequently invented process. Its product was held to infringe by the Court.

In Dunn vs. Toronto, 259 Fed., 258 (6th C. C. A.), the Court said, citing many cases:

> "in the ordinary and typical case the method and the product are separable inventions, supporting separate patents, one of which may be valid and the other not (Rubber Co. vs. Goodyear, 76 U. S. [9 Wall.], 788, 19 L. Ed., 566). It is therefore the duty of the Court to find, if it reasonably can, for a product patent some construction and scope which shall avoid, on the one hand, destroying its value—if not its validity—by confining it to the precise method of making which the patent has happened to show."

In Baker Co. vs. Refractories Co., 253 Fed., 741, the Circuit Court of Appeals for the Third Circuit said:

> "The patent in issue being a product patent we are not concerned with the process by which the product is produced; that forms the subject of another patent to Baker."

Tested by these simple and sound fundamental rules, defendants cannot escape infringement, for their product responds to every characteristic recited in the product claims in suit and to every characteristic of the finished Perkins' glue. Defendants do not even attempt to point out any distinction.

Whether defendants infringe the two-step process or glue base covered by other claims in the patent is obviously immaterial, for the two-step process claims and the claims limited to the use of a particular base are not in issue here.

Perkins under the law is entitled to cover the glue prod-

uct irrespective of how it is made and there is no justification in law or in fact for reading any process limitations into the claims for that glue product. If that glue product *per se* and without reference to process features, is not a patentable invention then **the claims in suit must under the law be declared invalid** and void for that reason. If the glue as defined by these product claims 28, 30 and 31 is old, these claims should be (and would have been in the prior litigation) declared invalid. But in point of fact and law the product was new with Perkins. If they are valid defendant cannot escape infringement under the law by reading into them specific process features claimed in other claims of the patent.

The 7th C. C. A. in the Solva Case Did Not Limit the Product Claims to the Two-Step Process.

In its summary of the prior art, the Court, in the Solva Case, comparing the prior art with defendants' two-step process and product (which were substantially identical with Perkins) said (251 Fed., 68):

> "*The only difference between the process of this particular patent and the practice of defendant, is in the use to which the glue material is put and the consequent difference of dilution of the solution thereof.* The patentee refers to the use of his adhesive for dressing or finishing, i. e., sizing or stiffening fabrics, while defendant and its customers employ the material for sticking veneer layers together. Therefore, the prior art patentee uses and describes a *relatively dilute solution*, while the defendants employ a relatively heavy solution just as the more familiar adhesive, animal glue, is used in dilute solution for sizing, etc., and in heavy solution as a glue for veneers, etc. *No other difference exists.* It is the defendants' view that this difference is an immaterial one." (Italics ours.)

The Court is referring to the Gerson & Sachse German patent or Virneisel French patent. The disclosure in the two patents is the same.

And at another part of the decision confirming this, the Court said (251 F., 70):

> "The difference between adhesives such as mucilage, sizing, etc., and glue suitable for veneering seems to consist largely in the degree of dilution,"

i. e., in the proportion of water to starch in the glue.

What the Court in the Solva Case held was, therefore, that this prior art discloses a process in which the starch is first degenerated by a *first step* with substantially the same chemicals as that employed by Perkins and defendants there, and to the same stage as reached by Perkins and defendants there, and that it was then dissolved by a *second step* in a solvent containing the same aqueous solution of the same reagent, i. e., caustic soda in water, and of the same concentration as Perkins and defendants there employed, i. e., the same concentration of caustic with respect to water; and that the only difference between what Perkins and defendants there did on the one hand and what was done in this prior art, was the *difference of dilution thereof,* i. e., the proportion of water in the glue with respect to the starch base. The Court there held that the prior art described a relatively dilute solution intended and usable only for sizing or stiffening fabrics or the like, while Perkins (and the defendants there) used a very much less amount of water, i. e., a heavy solution, and obtained a veneer glue not suitable for sizing or finishing.

It was also old to make a dilute starch sizing glue by a one-step process by dissolving so-called natural or raw starch in *excessive* water with caustic, as shown by Gerard and Dornemann.

The *only difference* between this prior art and Perkins was the *difference in the amount of water in the glue* which resulted in **important differences in kind** in the glue itself, making it a **new product.** The opinion of the Court in the Solva Cases states: *"No other difference exists."*

As stated in Naylor vs. Alsop, 168 Fed., 911 (8th C. C. A.), where the Court said:

> "The elements here involved are so numerous that a slight modification in the process would be likely to produce conspicuous changes in the product."

We, therefore, contend that 2nd C. C. A. and 7th C. C. A. in the recent cases have erred in assuming or holding that in the Solva Case it was held that Perkins' product was patentably new because of the combination of the two processes. The facts regarding the prior art could not justify any such holding there and cannot justify it here. We contend that these Courts in the later cases erred in ignoring the limitation as to the amount of water and the new characteristics resulting in the glue from the use of a limited amount of water which are the main features differentiating Perkins from the prior art mentioned. When these Courts hold that Perkins' product was patentably new because of "the combination of two processes," it is in effect a finding that **all Perkins did was to take two steps to make glue instead of one, and either way was as fully disclosed in the prior art as the other.** While these two Courts (2nd C. C. A. and last decision 7th C. C. A.) thus hold that the product claims are limited to "the combination of two processes," yet, since this combination idea was old in Gerson & Sachse, these Courts in effect have held that **there is nothing patentable in the whole Perkins patent** or any of its claims. **They allegedly save the claims by reading into them merely that which is old.**

If the Product Claims Are Valid, Defendant Infringes.

Where, as in the case at bar, the product is a recognizable and definable individual by itself (differentiated by the characteristics recited in the product claims) and can be made in different ways and by different processes, in that case it is an invention by itself and irrespective of any par-

ticular process of making it. Claims 28, 30 and 31 in suit are for the finished glue constituted or composed of the ingredients severally recited in those claims in the condition and proportions recited in those claims and having the properties recited there. *If that finished glue is not patentable by itself those claims must be held invalid.*

The defendant in the end reaches the same identical wood and fiber glue Perkins reached, and it is specified in claims 28, 30 and 31, and if these claims are valid there can be no question of infringement under the authorities cited.

Defendant selects a starch as it comes on the market which is not quite degenerated so as to come within certain tests specified in the patent and then dissolves the same in the small amount of water with caustic, but prolongs the agitation with heat so as to further reduce the viscosity in the dissolving step, thereby obtaining as an end product the same good as animal glue which Perkins obtained by his preferred process. We submit such practice infringes the product claims 28, 30 and 31, whether or not it infringes the process claims. See Footnote:

Defendant has merely found a way to achieve the required semi-fluid condition by continued mechanical agitation with heat after the glue has come across into a colloidal compound instead of attaining that same semi-fluid condition (at once upon the glue coming across) by previous slightly greater degeneration of the starch.

---

*For all we know the defendants' glue may be made by a two-step process. True, the testimony shows they only perform the second or dissolving step on the starch base, which is obtained from Java. However, no one available knows what happened to it in Java. It is generally known that the starch is obtained by grinding the cassava roots in water and washing away the impurities. It is also known that chemicals have been used to bleach the starch and help separate out the impurities. Most of the factories in Java operate under secret processes, so that we are unable to learn whether they use such chemicals and in quantities such as would produce the condition of degeneration found in defendants' base, or whether that degeneration is produced by some change in the cultivation of the plant. Obviously it would be very easy for the starch manufacturer in Java to secretly carry out the first step or process there and we would have no way of proving it.

There may be said to be a difference in *process* between the way defendant attains the end product and the way Perkins *preferred* to attain the same end product. But there is no difference in the end products themselves. The same finished glue product attained by Perkins having all the characteristics set out in claims 28, 30 and 31, is attained and used by defendant with its Kane base.

If these claims are valid we submit they are infringed by defendant's glue in question and **if they are not so infringed they must be invalid.**

Plaintiff's Alleged Failure to Appeal From Judge Sanborn's Reasoning Has No Bearing.

Much has been made of the fact that plaintiff did not appeal from Judge Sanborn's memorandum on final decree in the Solva Case, discussed at pages 115-121, *ante*. Apparently this was an important factor in the mind of the 2nd C. C. A. and the 7th C. C. A. (in its last decision), for the 2nd C. C. A. said:

> "We are not advised that any appeal was ever taken from this interpretation of the ruling of the Circuit Court of Appeals" in the Solva Case,

and the 7th C. C. A. said (referring to Judge Sanborn's memorandum on entry of final decree):

> "the Perkins Glue Company failed to appeal from his consequent action."

But the product claims were the only claims plaintiff particularly cared about and the decree held those valid and infringed as plaintiff had prayed in its bill of complaint. Plaintiff could not appeal from such holding in its favor, no matter what Judge Sanborn's reasons were for holding them valid. No appeal lies from a Court's opinion and reasoning (Russell vs. Kearn, 69 Fed., 94; 16 C. C. A., 154

(C. C. A., 7th); Clarke vs. Deere & Mansur Co., 80 Fed., 534, 537; 25 C. C. A., 619 (C. C. A., 7th); Evans vs. Suess, 83 Fed., 706, 709; 28 C. C. A., 24 (7th C. C. A.). We submit that the 6th C. C. A. below correctly disposed of this question, where it stated (Rec., 657):

> "Several references have been made to the fact that plaintiff did not appeal from the decision holding invalid the second-step process claims as they read, and for lack of such appeal inferences are drawn against the plaintiff as to the validity or scope of the final product claims. This is again a non-sequitor; but we see no basis for such inferences. The plaintiff had an infringement decree upon the product claims. Its injunction could have been no broader, nor its recovery of damages greater, if the process claims were also sustained. The decree sufficiently bound the defendant, and it would not bind strangers anyhow, no matter what form it took. Whether plaintiff should appeal as to these process claims was merely a matter of policy,—and of doubtful policy. As to the product claims, **it could not appeal**, because the decree was in its favor. It acquired no right of appeal because Judge Sanborn used some reasoning which might be applied to limit those claims in some later litigation with others."

The reasoning of the 2nd C. C. A. and 7th C. C. A. to the effect that plaintiff was estopped to contend for its construction of the valid product claims because it failed to appeal as to the process claims is without precedent and contrary to accepted legal principles.

The Disclaimer as to Process Claims 9, 10, 11, 12, 13, 14 and 38 Does not Limit or Affect the Product Claims 28, 30 and 31.

The C. C. A. in the Solva Case found that Perkins was not the inventor of the glue base *per se;* nor the inventor of the first step degeneration process *per se.* Plaintiff accepted this holding and filed an absolute disclaimer of these

base and base process claims. But this could not affect plaintiff's monopoly secured by the final glue product claims 28, 30 and 31 which were for a different invention.

The Court also held invalid the claims for the "so-called second step as such" although holding valid the "claims of the patent for the final process."

But Judge Sanborn, on the coming down of the mandate, was unable to find in issue any claims which corresponded to second step claims "as such," except such process claims as 13 and 38, and so, in his final decree, he held those claims invalid against his own reasoning on the merits, and against his own reasoning from other parts of the C. C. A. opinion.

This holding of process claims 13 and 38 invalid was made although the Circuit Court of Appeals had nowhere pointed out any such process as old in the prior art, unless by "second step" it meant merely the step of dissolving starch broadly (such as soluble starch) in water and caustic to produce a different kind of a product, including the old sizes and pastes.

We submit the C. C. A. in the Solva Case construed these broad process claims so broad or indefinite as to cover processes for making sizes and pastes. Perkins did not intend to claim the process so broadly, and so with respect to such *process* claims (and such process claims only) he disclaimed any *process* which did not start with a base degeneration to the extent prescribed in the patent, in order to limit his *process* invention substantially to his preferred process.

The glue itself was already adequately covered by product claims such as 28, 30 and 31. The disclaimer *limited merely the process claims* to the use of a base degenerated to the extent described in the patent. **The process claims might have been originally so limited when the patent issued, and, of course, in such case it could not have been successfully contended that the product claims were limited in the same**

way; nor could it have been contended, even if the patentee had cancelled all process claims before the patent issued and retained only the product claims, that he thereby acknowledged that the public had a right to carry out his or any process *to make his product.*

A process claim may only define the process by features which in some relation are old in the art, and in such case the process claim is too broad or indefinite. The C. C. A. in the Solva Case (according to Judge Sanborn) thought this the situation with the second step process claims 13, and 38, but Perkins' disclaimer which limited those claims to a further feature of the process, namely, starting with a particular base, did not give the public the right to use some other process to make the new product *covered* by the product claims 28, 30 and 31. The disclaimer merely conceded that the patentee would not hold as an infringer of the *process claims* anyone who did not start with a base degenerated to the extent stated in the patent, and conceded nothing with respect to the glue product Claims 28, 30 and 31.

These second step process claims 13 and 38, after reciting the step of the process, conclude with the statement that it is to produce a glue having the adhesiveness of animal glue. The argument was made by plaintiff on the coming down of the mandate before Judge Sanborn that such process claims as 13 and 38 could be limited by construction to the production of the new Perkins glue, but when Judge Sanborn with hesitation adopted the view that those claims were intended by the C. C. A. to be held invalid, it could only be assumed that if the C. C. A. so intended, that intention must have been based on a construction of those claims which disregarded the concluding language of the claims as to the character of the result (equivalent to "whereby clauses" in the claims). For it is a rule of construction of patent claims in many courts and it is an ordinary working rule in

the Patent Office that the novelty of a claim must be found elsewhere than in the "whereby clause." (See Foot Note.)

There is nothing in all this to warrant the conclusion that plaintiff thereby admits that defendant's process and defendant's product were old in the art.

Walker on Patents (5th Ed., 207, p. 275) states:

> "The mere fact of disclaimer is no evidence that the matter disclaimed is a part of the prior art."

In the case of Sessions vs. Romadka, 145 U. S., 29, the matter disclaimed did not belong to the prior art but on the contrary comprised several other inventions of the patentee which the patentee did not choose any longer to claim in that particular patent.

Thus in Electro Dynamic Co. vs. Westinghouse Co., 191 Fed., 506, 508, where the plaintiff sought to base the novelty of its claims on the statements of whereby clauses, the Court said:

> "That this 'whereby clause', adds nothing to the claim is fundamental. It is a statement of asserted result, not of method or means of reaching it; and in this instance it is but a repetition of the stated 'object of my invention' with which the application begins, a sort of Q. E. D. triumphantly affixed to the asserted solution of the problem."

See also Burke Co. vs. Tool Co., 232 Fed., 145, where the Circuit Court of Appeals for the Second Circuit adopted the opinion of Judge Learned Hand. In that opinion the latter had said of the words "whereby approximately the same speed, etc.:"

> "Nothing is gained or lost by these words; if they are surplusage they are at least harmless surplusage, adding no element to the claim which is just as good without as with them."

Judge Kohlsaat, who wrote the opinion of the Circuit Court of Appeals in the Solva Case, seems to have held this view of the law as to the interpretation of claims. See Parramore vs. Stein, 125 Fed., 19. There the only differentiation in the claims from the prior art was in a statement of adaptation. Of this Judge Kohlsaat said:

> "The patent is for a hose supporter, and nothing more. The requirement that it shall be adapted to be detachably engaged with the corset stud or with the corset at the point where the corset sections meet, is merely descriptive * * * we must, for the purpose of this inquiry, entirely disassociate the question of the place of use or application of the supporter of complainant from the article itself."

So in Carnegie Co. vs. Cambria Iron Co., 185 U. S., 403, the disclaimer was held by this Court to be a good and valid disclaimer although it merely removed an ambiguity.

This Court said in Sessions vs. Romadka, 145 U. S., 29, that "the power to disclaim is a beneficial one."

We submit a disclaimer should not be given by the Courts an effect so harsh and so hostile and so contrary to every purpose of the patentee in entering it as to extend it far beyond its terms and its purpose and convert it into an instrument of unintended self-destruction.

Perkins' disclaimer was filed after due consideration and it must be presumed that if it was the intention to limit the product claims, they would have been mentioned in the disclaimer.

Defendant's counsel has heretofore put the question: How is it that a product produced by the disclaimed process is nevertheless within the patent? Like many other misleading questions, the question erroneously assumes that the disclaimer disclaimed a process which only produced Perkins' glue instead of a broader process *claim* which covered the production of other things; and the question likewise erroneously assumes that there was only one invention covered by the patent and ignores the fact that there were a plurality of inventive ideas covered by different claims of the patent whereby the patent is in that respect like two patents, one for the process and the other for the product. It was the *claims* in the process patent which were disclaimed and the claims in the product patent were not disclaimed, for **those had been held valid and infringed and required no disclaimer.**

The fact that the process claimed may be unpatentable *per se* because capable of producing not only the product claimed but also some other and old product is no ground for holding the new product producible by that process unpatentable.

We submit the case at bar is analogous to Rubber Co. vs. Goodyear, 76 U. S., 788; 19 L. Ed., 566, where **this court**

held the process claim invalid but sustained the product claim as valid and infringed.

The patent there in suit was originally granted to Goodyear for new and useful improvements in India rubber fabrics. This patent was surrendered and reissued on June 15, 1849, for a new and useful improvement in processes for the manufacture of India rubber. This reissued patent was extended June 14, 1858, and was again reissued November 20, 1860, in two patents, one entitled "For Improvements in the Manufacture of Caoutchouc," and the other for "Improvement in the Art of Preparing Caoutchouc."

One of these, No. 1085, was for the process by which vulcanized rubber is manufactured. The other, No. 1084, was for the product of the process in the form of the article produced.

This Court said:

> "It is contended by the appellants that both these patents are invalid, for two reasons: One, because they are broader than the claims of the patent surrendered by the executor; and, Two, because one is for a process and the other for the product of that process. The Court below held the objection to the patent for the *process*—that it is too broad—fatal to its validity *because the claim embraced other vulcanizible gums besides India rubber as articles to which the process was to be applied.* From this part of the decree below no appeal was taken by the complainants. It is, therefore, final and conclusive in its effect, and the patent to which it relates must be laid out of view. It remains, therefore, to consider only the patent, No. 1084, which is for the product." (Italics ours.)

This Court (in sustaining the product claim, although the process claim was invalid) said:

> "Patentable subjects, as defined by the Patent Laws (Act of 1836, Sec. 6) are 'any new and useful art, machine, manufacture or composition of matter or any new and useful improvement on any art, machine, manufacture, or composition of matter.' A machine

may be new and the product or manufacture proceeding from it may be old. In that case the former would be patentable and the latter not. The machine may be substantially old and the product new. In that event the latter and not the former, would be patentable. Both may be new, or both may be old. In the former case, both would be patentable; in the latter neither.

"The same remarks apply to processes and their results. Patentability may exist as to either, neither, or both according to the fact of novelty or the opposite. The patentability, or the issuing of a patent as to one, in no wise affects the rights of the inventor or discoverer in respect to the other. They are wholly disconnected and independent facts. Such is the sound and necessary construction of the Statute."

This Court held the product claim valid and infringed, in spite of the fact that the process claim for making the article was invalid.

The Perkins' disclaimer, disclaimed the claims to the glue base and glue base process or first step and also limited the second step process claims to certain preferred process features. The glue product claims (including 28, 30 and 31 here in suit) were deliberately omitted from the disclaimer. The fact that they were so omitted from the disclaimer is, we submit, conclusive that the disclaimer could not affect them. Under principle and authority a disclaimer as to one claim can not be legitimately construed as a disclaimer of a different claim.

Robinson on Patents, Vol. 2, Sec. 650, page 289, says:

"The disclaimer of a void claim does not affect such other claims of the patent as by themselves are valid."

The 9th C. C. A. in Graham vs. Earl (92 Fed., 155) discussed this question at length and held that the disclaimer of claims which are too broad does not affect the scope of other claims which are valid even though the article covered by such other claims is within the scope of the disclaimed

claims. The pertinent parts of this decision are quoted in the footnote below.

In Graham vs. Earl, 92 Fed., 155, 158 (9th C. C. A.), the Court said:

"Claims 1 and 2 of the patent just referred to are exceedingly broad, and cover all possible means for holding the lids of the ventilators open in oppositely inclined positions, while its claims 3 and 4 are more narrow, and cover only the specific means therein particularly described for holding such lids open. *The whole argument of the plaintiff in error upon this point seems to rest upon the proposition that, as Claims 1 and 2 are broad enough in their descriptive language to include the specific combinations covered by Claims 3 and 4, plaintiff's disclaimer of Claims 1 and 2 was, in legal effect, a disclaimer of the particular device described in claims 3 and 4; in other words that the particular means for holding the lids of the ventilators open as described in Claims 3 and 4 were thus disclaimed because such means are covered by the broad language of Claims 1 and 2. In support of this position it is argued that the disclaimer filed by the plaintiff is not to be treated as a simple withdrawal or expunging of Claims 1 and 2* from the specifications of which they originally formed a part, and *thus leaving the remaining claims to be construed as if such claims 1 and 2 had never been made*, but that the instrument of disclaimer is to be construed by itself *as an independent and affirmative declaration by the plaintiff that he was not the first or original inventor of any device covered by Claims 1 and 2*; and the case of *United States Cartridge Co.* vs. *Union Metallic Cartridge Co.*, 112 U. S., 644, 645; 5 Sup. Ct., 486, is cited to sustain this proposition. In that case it was said:

> 'The disclaimer was one of the facts of invention. It could not lawfully be anything but a disclaimer of the fact either of original invention or of first invention. It was not merely the expunging of a descriptive part of the specification, * * * but it was a disclaimer of all claims based on such descriptive part,' etc.

But in that case the Court was discussing the effect of a disclaimer of the fact of invention of a specific and particular mechanical device, the language of the disclaimer thus construed by the Court being:

> 'Your petitioner disclaims the said movable die, D, called a bunter, as being the invention of said Ethan Allen; thus leaving the description of said die, D, the same as shown in the original patent and the drawings thereof.'

Of course, in such a case the Court properly held that the disclaimer was specific, and must be construed as an affirmative declaration that the patentee was not the inventor of the particular thing dis-

(*Footnote continued on next page.*)

In United States M. P. Co. vs. Hewitt Co., 236 Fed., 739, 742 (7th C. C. A.), it was held that a disclaimer of one claim does not affect the scope of another claim which was not mentioned in the disclaimer. The Court said:

> "Clearly the second claim was disclaimed because it covered, not a ring, but an old combination of the ring and the other elements used in the stuffing box. The packing ring in this combination was described only as composed of interlocking segments and formed with a conical end. *Obviously, neither this claim nor its disclaimer can extend or limit the scope of the first claim,* the only claim for a special ring construction."

We submit that if the law as laid down in these cases (and heretofore universally followed) is sound, there is nothing left of defendant's position with respect to the disclaimer.

Defendant's unwarranted assumption that, if the disclaimer relieves it from the charge of infringement of the seven stated *process* claims to which the disclaimer refers, it is thereby relieved from the charge of infringement of all of the claims of the patent, is, we submit, nothing short of ridiculous.

The present case is to be carefully distinguished from the case of a disclaimer with respect to the patent as a whole or with respect to the invention of the patent as a whole, for in such a case, the disclaimer is general in its nature and is intended to be general and applicable to all the claims.

---

claimed. *In considering the scope and effect to be given a disclaimer, the same rules are to be observed as in construing any other written instrument, and so as to carry out the intention of the person executing it, as indicated by its language when construed with reference to the proceedings of which it forms a part.* It cannot be read independently of its relation to the original specifications, of which it becomes a part when recorded. Applying this rule of interpretation to the disclaimer, filed by the plaintiff in this action, it would seem too clear to admit of any doubt *that such disclaimer cannot be given the broad and sweeping effect claimed for it by the plaintiff in error.*" (Italics ours.)

A disclaimer when once filed is as if it had always been a part of the patent and a part of the claims to which it relates.

Walker on Patents (5th Ed., Sec. 207, p. 275) says:

> "The construction of a patent, after a disclaimer has been properly entered, must be the same that it would have been if the matter so disclaimed had never been claimed."

Suppose the patent had issued with Claims 9, 10, 11, 12, 13, 14 and 38 reading exactly as the disclaimer now makes them read, what effect under that supposition would the fact of such limitation of those process Claims 9, 10, 11, 12, 13, 14 and 38 have had upon the proper legal construction of the product claims 28, 30 and 31 in suit? We submit there can be but one answer to that question. It would have had no effect whatever. It would have had no more effect, for example, than the recital of process details that is found and has always existed in Claim 21 or in any other detail claim of the patent and that is no effect at all.

We submit that the disclaimer can not and does not in the slightest degree, affect the scope of the product Claims 28, 30 and 31 here in suit.

The Inconsistency of Defendant's Position.

Defendant's counsel assert in their brief (pp. 3, 4) that defendant's position was sustained by the 2nd C. C. A. in the Standard Furniture Case and by the 7th C. C. A. in the Wisconsin cases. We submit this is not so.

The position taken by the 2nd C. C. A. in the Standard Case (287 Fed., 109) was that

> "There can be no infringement because the defendant is not using a glue which is the result of **both steps** of Perkins' patent."

and that patentability resulted solely from "a combination of **two processes** severally old," and similarly the position

of the 7th C. C. A. in the Wisconsin Cases (292 Fed., 596) was that

> "the only patentably novel thing that could be attributed to Perkins' labors was the **combination of two processes** which were severally old."

The position of the defendant's counsel here is quite different, for instead of asserting that the patentable novelty consisted in the combination of the two processes or steps, they assert (p. 6) that

> "The gist of Perkins' invention, and the thing patented, was the choice of a starch glue-base degenerated to within a specified range,"

i. e., degenerated so as to come within the so-called 9 to 1 boil up test and 170° hot water test (p. 7). And defendant's counsel say (p. 3) that the glue "product claims sued on must be restricted to glue made from a starch having reduced water-absorptiveness within the range" measured by these "tests of the patent."

The Courts in the prior litigation did not say that these product claims are limited to a glue made from a starch base coming within these tests. Therefore, defendant's position is not sustained by any of the prior decisions and defendants have taken a position which is entirely different from and inconsistent with that taken by the Courts in the prior litigation including the 2nd C. C. A. in the Standard Case, and the 7th C. C. A. in the Wisconsin Cases, on which defendant allegedly relies.

However, we cannot see that it makes any material difference whether the glue product claims have read into them the two step process or the tests for the base, which, if anything, are likewise characteristics of Perkins preferred process, because the base is an intermediate product used in the process. Under the authorities cited, the reading of one set of process limitations in the glue product claims is just as illegal as the other.

The Absurdity of Defendant's Argument With Respect to the So-Called Tests for the Base.

The defendant's position (p. 2) that the thing patented is "characterized by the asserted novelty that for the glue base a starch is chosen" which comes within the 9 to 1 boil up test and the 170° test, and (p. 3) that the product claims in suit must be restricted to a starch base responding to these tests, seems to us wholly absurd.

It is absurd to say that a claim for one product (veneer glue) shall be restricted to the characteristics of another product (starch base). Especially is this so when as here the physical characteristics of the two are entirely different. The glue product is a viscous semi-fluid mass having the properties of animal veneering glue. The starch base is a dry powder having none of the characteristics of the glue product, and when the starch is dissolved in the water with caustic it loses all its characteristics as starch base and enters into the colloidal glue compound, and it is physically impossible to apply the 9 to 1 boil up test or the 170° test to that final glue product.

When defendants thus argue that it was this base of a particular degree of degeneration which was the new thing and gave patentability, they raise a false issue, for they thereby falsely assume that plaintiff is charging infringement of the alleged base invention or the process invention wherein a particular base is used, whereas the claims in suit are for an entirely different invention, i. e., the product, starch veneer glue.

We submit the issue here is not whether the defendant has used the Perkins preferred base, but whether the defendant has made a starch veneer glue having the characteristics defined in the product claims 28, 30 and 31 in suit, and the extent of degeneration of the base is not an element or feature of those claims. Defendant's counsel simply ignore the vital limitations stated in the claims in suit, and attempt to read into them a particular degeneration of the base, contrary to the law as laid down in the authorities, *ante*. Defendants erroneously characterize the

final glue product invention by the characteristics of a different invention. It is absurd for defendant's counsel to assert that the essential novelty lay in the use of a particular glue base, for that glue base was found to be old in Gerson & Sachse and every one has since accepted that holding. (See Defendant's Brief, p. 13.)

Pursuing their unsound and illogical reasoning, defendant's counsel, on pages 14, 15 of their brief, refer to Mr. Stryker's testimony where he said that in Mr. Perkins' early work "it was a question of getting a starch material modified in such a way" that when mixed up with the critically small amount of water it would produce the good as animal glue, and that the practical problem which Mr. Perkins worked out was "the discovery of proper means to, in the first place, modify a starch base to a certain defined and recognized point," but it should be noted that Mr. Stryker also emphasizes the importance of using the critically small amount of water, and what is more we are not asserting that defendant infringes Perkins "means," i. e., his process. This suit is for infringement of the final glue product.

It is true that in following his preferred two step process, in which he started with the old high viscosity starches, Perkins had great difficulty. He may have followed an unnecessarily tortuous path to reach the ultimate starch veneer glue, but the difficulties which he thus had in arriving at his preferred *process* can not be lawfully applied to limit his claims to the ultimate product which was new in and of itself. It may or may not be that his *process* is limited to the use of a base degenerated as stated, but the other invention, his glue product, is claimed independently of such process and is, therefore, not so limited. Defendants might just as logically say that Perkins had great difficulty in finding or developing a machine for making his glue and found it necessary in commercial operation to use a specially constructed power driven mixer, and his patent is, therefore, limited to glue made in such a specially constructed power driven mixer. We submit such line of reasoning is absurd.

Following the same illogical line of reasoning defendant's counsel (pp. 16-21) refer to various statements in the patent in suit and particularly to that portion where Perkins describes in detail his first step for making his preferred base to be dissolved by his second step, and defendant's counsel, therefore, say (p. 21) that "the essential thing was a particular degree of degeneration." It may or may not have been essential when following his preferred two step process, but it was not and is not essential to his final product—the new starch veneer glue, and the patent makes this clear by omitting any reference to such degree of degeneration in the product claims in suit.

But having thus set up a false issue, i. e., that the invention in issue is the production of a base of "a particular degree of degeneration" instead of starch veneer glue, defendant's counsel say (p. 21) that the law requires that the patentee explain "his invention so that the public may know how to practice it and they refer to the 9 to 1 boil up test, and defendants argue (p. 22) that this 9 to 1 boil up test "marks the metes and bounds" of the invention and (p. 23) that since defendant's base does not respond to this and the 170° hot water test, there is no infringement, and they cite certain cases. These cases, we submit, do not sustain defendant's position. See footnote below.

In O'Reilly vs. Morse, 15 How., 62, 112; 14 L. Ed., 601, 623, it was held that one might reissue a patent so that it would give a more perfect description of his invention but, we submit, the court did not hold that the whole patent and all its claims were thereby necessarily limited to each and all the details of description which were thereby introduced for the purpose of enabling others to practice the invention in its most efficient form.

In Cochrane vs. Badishe, 111 U. S., 293; 28 L. Ed., 433, 439, this Court said (p. 310), that

> "Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description

(*Footnote continued on next page.*)

There is nothing in the specification of the patent to the effect that such tests are to be considered as defining or

---

> of the process for making it, or else nothing can be held to infringe the patent which is not made by that process."

With this we heartily agree, for the product claims in suit do identify the product so that it can be recognized apart from the process or base which Perkins described as preferred for making it and, therefore, these claims are not limited to the particular base or process which Perkins gave as illustrative of one method of making his final product.

In Bene vs. Jeantet, 129 U. S., 683; 32 L. Ed., 803, the only product claim involved was one which defined the product as one made only "by the method of refining substantially as herein described" and, of course, the Court properly held that nothing could infringe except when made by the method so described.

In The Incandescent Lamp Case, 159 U. S., 683, 474; 40 L. Ed., 221, 224, the rule is stated that

> "If the description be so vague and uncertain that no one can tell, except by independent experiments, how to construct the patented device, the patent is void,"

and it was found that the description was insufficient to teach one how to make a practicable lamp and the patent was held invalid. Following this rule the Courts have frequently said that the patent must fully describe at least one way of making the patented article, but it is equally well settled that the patent is not thereby limited to that particular way.

In the Minerals Separation Case, 250 U. S., 336; 63 L. Ed., 1019, the claims were process claims and the claims on their face were limited to certain proportions. The Court, therefore, quite properly held them limited to such proportions and that a process employing proportions not falling within the *limitations set forth in the claims* did not infringe. Plaintiff here is not asking any such enlargement of the claims, for every characteristic and feature set forth in the claims in suit is equally found in defendant's glue.

Tyler vs. Boston, 7 Wall., 327; 19 L. Ed., 93, is an old jury case. It is authority for the rule that the patent must set forth in detail at least one way of making the patented article, but the Court held that the patentee was entitled to cover equivalents and such equivalents include materials which can be discovered only by experiment provided they are equally good.

Matheson vs. Campbell, 78 Fed., 910, 917, merely follows the rule above set forth in Cochrane vs. Badishe, 111 U. S., 293, and holds that "when the body under investigation fails to respond to the specific tests, the patentee has himself selected he can not fairly insist that it is identical with his product." But in that case there was only one claim in the

(*Footnote continued on next page.*)

limiting the final glue product invention, but quite the contrary.

The 9 to 1 boil up test is described in the patent beginning at line 127, page 3. The patentee does not give this as a universal test of his invention but merely as **"one way"** which he found "quite satisfactory for determining when the action of the **acid or its equivalent"** has been "carried **far enough** in the first step." The test was obviously intended to be applied only to a base degenerated by the sulphuric acid or its equivalent and then only to determine when the degeneration had been carried "far enough." It was **not a limiting test** of any thing but only a **"quite satisfactory" test** given by way of example (as held by the 6th C. C. A., below) as one means by which the operator might surely reach the desired result, and not as the only means by which he could reach the result. The patent nowhere states that the glue product may not be made from a base not falling within the test. It is perfectly apparent that the test was given, not as any limiting characteristic of the final glue (to which it is not applicable), nor even as any limiting characteristic of the base, but merely as characterizing **one example** of a suitable base, thereby necessarily implying that other bases might be used.

---

patent which was for a dyestuff product, and the tests were for that product, and not for a different product as in the case at bar. The citation is wholly irrelevant because it is obvious that a product cannot be defined or characterized by tests which do not apply to it but only to some other and different product—the base.

American Co. vs. Mesta Co., 18 Fed. (2nd), 538, is likewise merely authority for the proposition that where the patentee identifies his product by certain "novel characteristics," only a product having those characteristics will infringe. Applying the rule to the case at bar nothing can infringe the product claims in suit unless it possesses all the characteristics recited in those claims and has substantially the properties, etc., of the final starch veneer glue described. Since defendant's glue has all these characteristics and properties, infringement is clear.

These cases are no authority for holding that the patented product here is limited to the characteristics of another and different product, the glue-base.

Substantially the same may be said with respect to the 170° test described in the patent beginning at line 74, page 4. This so-called test is not given as any limiting test for the patentee merely says "Also in actual practice I have found that a good is produced" when a base is used which is degenerated sufficiently to respond to the test. He says that such a base is suitable for making the glue, but this is very far from saying that a base *must* be degenerated to that extent in order to make the glue. Indeed the patent points out that the glue may be made from certain grades of untreated cassava and specifies neither the 9 to 1 boil up test nor the 170° test in connection therewith.

We submit that the only limiting test which may be applied, if any, is that indicated in the patent at lines 40-43, page 4, where it is indicated that the base is one which "may be formed into glue by using only from one to three parts of water." This is evidently what was referred to by the C. C. A. in the Solva Case where they said (251 Fed., 69), referring to various so-called tests, "The most satisfactory of these is to apply the second step of the patent and if the result is the veneering glue of the patents the operator has guessed right," and defendant's expert agrees with this where he says (Rec., 178):

> "His fundamental and final determining test is apparently the fact that it forms a glue with one to three parts of water."

None of the Courts has considered the 9 to 1 boil up test or the 170° test material on the question of infringement of the glue product claims. Even the 2nd C. C. A. in the Standard Case (upon which defendant allegedly relies) found (287 Fed., 111) that defendant's base there was "of that degree of viscosity, etc., which Perkins achieved by his degenerative process" although it was

there conceded that it did not fall within the 9 to 1 boil up test. These tests serve the purpose of indicating one way in which the glue of the patent can be produced *with certainty.* They furnish no possible basis for a limitation of the scope of the glue product claims.

Defendant's counsel refer (p. 24 of their brief) to the statement in the patent that the glue may be made with "certain grades of untreated cassava" and they say this was inserted by amendment and (p. 25), if it be construed to include starch which does not fall within the 9 to 1 boil up test and 170° test, it is invalid for new matter. We submit to the contrary. This amendment merely inserted a statement of fact that the same glue could be made from certain grades of untreated cassava, etc., and, it therefore "related to the original purposes and objects set forth in the original specification and claims" as held by the 7th C. C. A. in the Solva Case (251 Fed., 66). Defendants counsel argue (p. 25) that plaintiff's attorneys and expert in the Solva Case interpreted the language to mean only untreated cassava which responded to the 9 to 1 boil up test and 170° test. Plaintiff's attorneys and expert gave no such interpretation in the Solva Case and the Court there in effect held just to the contrary, for most of the starch base there involved, was untreated cassava and there was no evidence that it came within either of these tests and yet the Court held that the glue made therefrom was an infringement. Defendant's counsel cite certain cases to the effect that patents should not be enlarged by amendment so as to cover other inventions made **prior** to such amendments. There is no evidence here that anyone else conceived of the possibility of making a starch veneer glue from any "untreated" starch **prior** to the amendment in question, and in any event the claims in suit are amply supported by the original specification without the amendment, for a patentee is not required to state every possible method for making his product in order to

cover the product however made. The cases cited do not aid the defendant. See footnote.

Defendant's contention here is, in effect, that if one files a patent application for a new product and desires to cover the product when made by any process, he must describe in his specification every possible process by which the product can be made, and if he omits one such process and someone later makes the same new product by such process, then the latter is not an infringer, because to include such omitted process is unlawful for new matter. We submit that is not the law and never has been the law. Under the authorities hereinbefore cited the rule is laid down that a process and its product are separable inventions and a claim which defines the new product by its distinguishing characteristics (as here) is not restricted to the product made by the process which the patentee happened to describe.

Defendant's counsel say (p. 26) that defendant's base is "of high water-absorptive propertiveness," i. e., of high viscosity. It may not fall within the so-called 9 to 1 boil up test and 170° test, but it is not a high viscosity starch in the sense of the patent. It is of medium range and relatively low compared with ordinary cassava starches of Perkins time (see ante, pp. 94, 95).

Defendant cites Railway Co. vs. Sayles, 97 U. S., 554, 564; 24 L. Ed., 1053, 1057, where this Court said, "The law does not permit such enlargements of an original specification, which would interfere with other inventors who have *entered the field in the meantime*." As above stated there is no such situation in the case at bar.

In Eagleton Co. vs. West Co., 111 U.S., 490; 28 L. Ed., 493, the Court found that the patentee did not describe and did not have knowledge of, the *tempering* of the springs before he filed his application. His application was addressed solely to *japanning* which was old and no method of *tempering* was disclosed. The amendment, which changed the patent to one for *tempering*, was, therefore, void for new matter. If here, Perkins had not in his original specification, described any method of making the starch veneer glue and had not described such glue itself, then the case cited might be applicable, but since Perkins fully described both in his original specification, the case cited is not pertinent.

The same may be said of Steward vs. American Co., 215 U. S., 161, and Michigan vs. Consolidated Co., 67 Fed., 121.

Defendant's counsel (p. 27 of their brief) refer to the Solva case, and erroneously assume that plaintiff's counsel now take a different position from that which they took in the Solva Case with respect to the glue product claims in suit. Whatever plaintiffs position there may have been with respect to the glue *base* and *base process* claims, plaintiff did not there take the position that the essential novelty in respect of the *glue product* claims here in suit was in the selection of a starch responding to the 9 to 1 boil up test and 170° test as defendant's counsel erroneously assume. Most of the Solva starch was untreated cassava as it came on the market and there was no evidence that it responded to these tests. Plaintiff contended that the glue made from such starch was an infringement and the Court so held.

Defendant's counsel argue (pp. 28, 30, 31) that plaintiff there distinguished from Gerard, Dornemann and Poplar Bluff "by insisting upon the essential importance of the first step—producing or selecting a starch base having the specified reduced water-absorptive properties," and because they used "undegenerated starch they were outside the scope of the patent." We submit this is contrary to the fact for the reasons just pointed out. Plaintiff there distinguished from Gerard, Dornemann and Poplar Bluff on the ground that they did not use the critically small amount of water and did not produce a glue having the characteristics set forth in the glue product claims in suit. Incidentally it may have also been pointed out that Gerard and Dornemann did not disclose what viscosity of starch they used.

Defendant's counsel (p. 29) quote that part of Solva decision which reads

> "The gist of appellee's contention as stated by counsel is that Perkins discovered that there is a point of degeneration of starch at which, when degenerated to that degree, the starch is treated to not to exceed three parts of water and a solvent there is produced

> veneering glue as good as or better than animal glue, and that appellants have appropriated that discovery and the application of it."

And they argue (pp. 29, 30) that, therefore, the gist of the invention was the choice of a starch coming "within the range measured by the tests of the patent." But this can not be, because the Court obviously found as an infringement, glue made from untreated cassava irrespective of whether it came within such tests. The statement above quoted does not sustain defendant's position. Although plaintiff's contention there quoted was made with particular reference to the process and base claims involved in the Solva suit, the doings of defendant here come squarely within what the Court there said was the gist of plaintiff's contention, for defendant's starch base here is one "degenerated to that degree" at which when "treated to not exceed three parts of water and a solvent, there is produced veneering glue as good as or better than animal glue."

Defendant's counsel (pp. 29, 30) refer to the fact that, although Mr. Kane was enjoined in the Solva case, plaintiff has not attempted to enforce the injunction against Mr. Kane or the Kane Co. in respect of his contributory infringement by supplying the defendant here with its base. Plaintiff was informed that Mr. Kane's company was financially irresponsible, and as soon as one of his companies was enjoined he started up under another company. We submit plaintiff should not be prejudiced because it elected to proceed against the direct infringer who was financially responsible instead of against the irresponsible "fly by night."

Defendant's counsel on pages 31, 32, 67, refer to the test made in the Solva Case on "ordinary" high viscosity undegenerated starch by dissolving it in three parts of water to illustrate the effect of the first step. The high viscosity starch used in that test was one of the old high viscosity starches such as Perkins commonly found on the market, and was not like the starches which now come on the market

already sufficiently degenerated, like defendant's base here. It is true that in arguing for patentability of the then asserted glue *base* invention and claim, plaintiff asserted as stated on page 33 of defendant's brief, that "In this wide field Perkins found a certain point or range," but nowhere did plaintiff's counsel or the Court say that this range was limited by the 9 to 1 boil up test and 170° test as defendant's counsel erroneously assume at the bottom of page 32 and page 33 of their brief.

Defendant's counsel say (pp. 33-35) that one of the starches used at Poplar Bluff was G. T. A., "the very brand now used by defendant here" and that plaintiff differentiated from this on the ground that the patent excluded glue made from such high viscosity starch. In the first place, we submit that while some of defendant's starch may be known as G. T. A. it is not the high viscosity G. T. A. used at Poplar Bluff for the proofs show that the cassava starches now come on the market very much reduced in viscosity and it was those **old** high viscosity starches that plaintiff was differentiating in order to sustain novelty in the **base** (not the glue). Plaintiff was not differentiating **defendant's** G. T. A. which is already sufficiently degenerated. Furthermore, as the quotations show, plaintiff differentiated from Poplar Bluff because of the excessive amount of water there used, and the C. C. A. in the Solva Case differentiated the Poplar Bluff glue from Perkins, not on the ground that none of the bases at Poplar Bluff came within the 9 to 1 boil up test, etc. (as defendant's counsel erroneously allege, p. 35), but on the ground that the Poplar Bluff glue did not have the critically small amount of water (about 3 parts or less) and did not have substantially the properties of animal glue because it was not suitable for fine work on furniture and the like, the Court saying (251 Fed., 67),

> "It does not, however, yield to less than three parts or less of water and a solvent, requiring four parts of water. It appears from the evidence that it was not suitable for fine work on furniture and the like."

Defendant's counsel (p. 38) refer to plaintiff's contentions on the petition for rehearing in the Solva Case where plaintiff argued,

> "The opinion makes it clear that Perkins discovered that a starch previously suitably degenerated could be subsequently dissolved with a solvent of starch and three parts or less of water and make the glue the patents describe, and that that constituted a proper basis for process and product claims, the **process** requiring both the previous degeneration and subsequent dissolving operation and the **product** being the resulting 'starch glue as good as animal glue and suitable for veneering.' "

We see no reason to take any different position now. It may be that the **process** invention, as defined by the two step process claims there referred to, requires both the previous degeneration and the subsequent dissolving operation" but that is not saying that the resultant *glue product invention*, the "starch glue as good as animal glue and suitable for veneering" requires that it be made from starch responding to the 9 to 1 boil up test and 170° test. As the quotations show, the plaintiff there went on to point out that the glue may be made from raw starch as found on the market provided it "is in a proper state or condition of degeneration * * * to make this final glue product." Defendant can find no justification in this for assuming that its glue (made from a starch already in a proper state of degeneration to make the good as animal veneering glue), is not an infringement.

On page 40 defendant's counsel refer to Judge Sanborn's statement that

> "the Appellate Court intended to sustain only those claims of the patent which include only the two steps, and only when their use results in the Perkins glue together with those additional claims which count on such glue as a product of the two steps."

We have heretofore pointed out that Judge Sanborn used the phrase "a product of the two steps" not for the purpose of limitation (for he was not called upon to construe any of the claims) but merely to identify and distinguish the glue product from the other product, i. e., the glue base (often called glue), the claims for which he was finding invalid under the mandate.

We submit that the statement of defendant's counsel (p. 41) that Judge Sanborn's decision limited the patent to glue made from "a starch having reduced water-absorptiveness within the range measured by the tests of the patent" is wholly erroneous. Nowhere did Judge Sanborn say or imply that the glue must be made from a starch responding to the 9 to 1 boil up test or the 170° test.

Defendant's Argument With Respect to the Disclaimer, etc.

Defendant's counsel (pp. 41-47) refer to the disclaimer and argue that plaintiff disclaimed the thing defendant uses (p. 43). Plaintiff may have disclaimed the claims for the base and the process, which claims were too broad and may have been so broad as to cover the process which defendant uses, but the disclaimer was only in respect of the base and process claims, and plaintiff did not disclaim the starch veneer glue product which defendant makes, for that was a **definitely distinguishable part** of the improvements claimed in the patent and it was covered by separate claims (including claims 28, 30 and 31 here in issue) as to which no disclaimer was filed.

We have discussed the disclaimer at some length *ante* and pointed out that under the authorities the disclaimer of certain claims in a patent does not limit or affect other claims not covered by the disclaimer. When, therefore, defendant's counsel assert (p. 46) that the disclaimer disclaimed the making of glue from starch by dissolving it in an alkaline solution with three parts or less by weight of water except only when the starch, chosen as the glue-base, is "degenerated to the extent described in said Reissued Letters Patent No. 13,436," they erroneously as-

sume, contrary to all precedent, that the disclaimer applies to all the claims of the patent instead of only to those claims designated in the disclaimer.

Defendant's counsel say plaintiff is bound by the disclaimer and cite certain cases. Of course, plaintiff is bound by the disclaimer but the cases do not support defendant's position to the effect that a disclaimer with respect to the base and process claims was in effect a disclaimer in respect of the glue product claims here in suit. See footnote.

Defendant's counsel argue (p. 45), in effect, that the disclaimed second step claims cover what defendant is doing and, therefore, defendant is within the disclaimed field. If this is so, then on the same reasoning, it must be that one who uses Perkins' base (degenerated to respond to all the tests of the patent) to make the glue out of, is also within the disclaimed field because plaintiff disclaimed all the claims for the base. It is no objection that the improvement in question is embraced by an invalid claim. In O'Reilly vs. Morse, 15 How., 121, 122; 14 L. Ed., 627, the Court said:

> "It is certainly no objection to this patent, that the improvement is embraced by the eighth claim in the former one. We have already said that this claim is void," etc.

See also Graham vs. Earl, page 148, ante.

In Dunbar vs. Myers, 94 U. S., 187; 24 L. Ed., 34, there were three claims in suit. A disclaimer had been filed with respect to claim 1. This Court did not assume to hold that the disclaimer in any way limited the other claims.

In Atlantic Co. vs. Hulings, 21 Fed., 519, the disclaimer was with respect to the patent as a whole and all its claims and was not a disclaimer with respect to certain claims only, as in the case at bar.

In Bracewell vs. Passaic, 107 Fed., 469, claim 1 was entirely excided by the disclaimer, and the disclaimer also limited the word "color" in the second claim "to coal tar colors or dye wood extracts such as are referred to," etc. Therefore, after the disclaimer there was only one claim left in the patent and that claim was expressly and in terms narrowed by the disclaimer. In such a case it necessarily followed that whatever was disclaimed was disclaimed from the patent as a whole.

Defendant's counsel (pp. 48-52) refer to language use by Judge Sessions in his decisions in the Hood-Wright an West Michigan cases and in the case at bar, and by plain tiff's expert therein, and they argue in effect, that the lan guage shows that plaintiff's expert and Judge Session considered the product claims here in suit to be limite to a glue made from a base coming within the 9 to 1 boil u test and 170° test. We submit the language means no suc thing. Plaintiff conceded that the bases there used did no come within the 9 to 1 boil up test, and so when Judg Sessions held the glue made therefrom to be an infringe ment it must have been on the understanding that whethe the base responded to such tests was immaterial.

Substantially the same may be said of defendant's dis cussion of Judge Cooper's decision in the Standard case given at pages 53, 54 of defendant's brief. It was ther conceded that the base did not fall within the 9 to 1 boil u test and yet the Court held the claims infringed.

Defendant's counsel seem to admit (p. 56) that "Perkin introduced starch glue into the veneer industry" and firs "produced a vegetable glue that paralleled the anima glue solutions then employed in the veneering industry," but they claim that its wide adoption only came abou (p. 57) "when the war raised the price of animal glu to a prohibitive figure for veneering." We submit thi is calculated to create an erroneous impression for the glu was widely adopted long before the war started. Th evidence in the Solva case showed that it went into com mercial use the latter part of 1907 and when the evidenc was adduced at the trial of the Solva case in January 1915, it was shown that many millions of pounds of plain tiff's glue base had been used to make the glue out o and by over a hundred different customers, which lea Judge Sanborn to find (223 Fed., 794), that

> "The Perkins invention has been very successful millions of pounds of what is called the glue base * * are sold each year,"

and this was the situation at the beginning of the war in the latter part of 1914 and long before the United States entered the war.

Defendant's counsel contend (p. 58) that the process and product claims here are of such an exceptional character that they are necessarily inherent and inseparable like the two sides of a sheet of paper. But they are not. The 7th C. C. A. in the Solva case held these claims for the second step or process invalid while holding the glue product claims valid, thereby necessarily implying that the glue product was a separable and distinct invention from that covered by the second step process claims. If they were "inherent and inseparable" as defendants contend, then the Court would have necessarily held both groups of claims invalid. The defendants cite certain cases which, we submit, do not sustain defendant's contention. See footnote.

Defendants cite Giant Powder Co. vs. Powder Works, 98 U. S., 126; 25 L. Ed., 77. The question there was whether the claim in a *reissued* patent was for the same invention disclosed in the *original* patent and the Court, finding (p. 135) that in the original patent there was "not a hint" of the new composition claimed in the reissue, held the reissue was not for the same invention. The facts were not analogous to those in the case at bar, but, if anything, it seems to us that the case is authority for the proposition that the process and composition there involved were not inherent and inseparable.

In the Packing Cases, 105 U. S., 566; 26 L. Ed., 1172, the patent related to the preserving of cooked meat and there were two claims, one for the process and the other for the product.

The patentee reissued the patent omitting certain parts of the description which stated that the meat was compressed "while heated with cooking." The reissue was an attempt to make the claims cover the packing of the cooked meat when cold if they did not already cover it. Later a disclaimer was filed whereby the patentee disclaimed any process described and claimed by which meat is compressed into the packages in any other than a warm or heated condition, and the patentees further disclaimed any interpretation or legal construction of the words of the specification of the reissued patent broader than is conveyed by the words "The meat is first cooked thoroughly by boiling it in water, so that all the bone and gristle can be removed and the meat yet retain its natural grain and integrity."

(*Footnote continued on next page.*)

The fallacy of defendant's position is further illustrated on page 59 of their brief. Referring to the C. C. A. decision in the Solva Case they say,

> "The defect in the 'second step' claims as they stood in the original patent was that, although they defined the particular quantity of water they did not limit the selection to the particular kind of starch, chosen as the glue-base,"

and, therefore, they were anticipated by the prior art. Maybe so. But they argue from this that it was also necessary to similarly limit the glue product claims. If that were so then the glue product claims would have been invalid for the same reason and the Court would have held the glue product claims invalid as it did the second step

---

The disclaimer did not distinguish between the two claims (as in the case at bar) but disclaimed from the whole patent and specification, thus including both claims. In that case the prior art necessitated the disclaimer as to both claims, contrary to the situation here. In that case both product and process were old when the cooking was done by broiling, roasting or steaming, and neither claim covered anything new except when the cooking was done by boiling.

The Court held that both claims must fall together, not because of the disclaimer, but because of the prior art.

In Western vs. Ansonia, 114 U. S., 447; 29 L. Ed., 210, the original patent had been reissued into two patents, one for the process and the other for the product. The claim for the process read:

> "The method of insulating telegraph wire by first filing the pores of the covering and subsequently compressing this covering and thereby polishing its surface, substantially as described."

The claim for the product read:

> "An insulated telegraph wire, the covering of which has its surface polished substantially as described."

The words "substantially as described" imported the process into the product claim. There is obviously no material difference in scope between these two claims. They disclose exactly the same idea. So, of course, the two must stand or fall together when tested by the prior art. There was no disclaimer involved, disclaiming something from the process claim and not from the product claim, as in the case at bar. In that case the Supreme Court found no patentable invention in either claim when tested in the light of the prior art. The two claims fell together for that reason.

claims. Defendant's construction of the Solva decision must, therefore, be erroneous. The fact that the Court thus fundamentally distinguished the product claims from the second step claims by holding the former valid and the latter invalid, shows that the two are not inherent and inseparable as defendants contend. If the Court saved the product claims by reading into them the tests for the base (as defendant contends), then the Court would have also saved the second step claims by likewise reading into them the tests for the base.

Defendant's counsel refer (p. 62) to the opinion of the 6th C. C. A. below, where they say, "To confine the base to these two suggested examples (they are examples, not tests) would be to rewrite the specification" and defendant's counsel ask (p. 63) what does the Court mean, and defendant's counsel say that "without some such measure the patent would be invalid for insufficiency of disclosure."

Here again defendant confuses the scope of the claims with the particular examples which the patentee has given as merely illustrative of the particular method by which he prefers to carry out the invention. It is axiomatic that a patentee is not limited to the particular embodiment which he happens to describe in his specification. If this were not so a patentee in order to adequately cover such a product invention, would have to describe in his specification every possible way of making that product. The scope of a patent is not to be measured by such illustrative examples but, as stated by Walker on Patents (5th Ed., p. 221), "the claims measure the invention."

Defendant's counsel say (p. 64) that in the Solva case the yardstick applied by plaintiff was the 9 to 1 boil up test. We submit this is erroneous, and we further submit that Perkins did not reject the raw starch such as defendant uses, as defendant's counsel contend, but on the contrary he was very careful to draw his glue product claims of sufficient breadth to cover the glue when made from such raw starch.

Defendant's counsel (p. 65) apparently concede that modern cassava starches are less viscous than the starches at the date of Perkins' invention but they say there is no evidence "that such starches have reduced water absorptiveness of the range of the Perkins patent." This demonstrates that defendant's previous contentions are unsound, where defendant's counsel argue that the glue made from raw starches involved in the Solva Case and before Judges Sessions and Cooper were held to be infringements because they were within the range measured by the two tests in question. The statement of defendant's counsel above quoted also, it appears to us, contradicts their statement (p. 71) that the raw cassava in the Solva case was a starch "responding to the tests of Perkins' patent."

On page 67 defendant's counsel speak of defendant's glue as a "heavy" glue "that does not have the fluidity of the Perkins' glue." This is misleading. Of course, since defendant's base is slightly higher in viscosity than the Perkins preferred base, defendant's mixture is somewhat thicker, heavier and more viscous during the *earlier* stages of the solution, but by prolonged agitation with heat under the action of the caustic a reduction in viscosity is obtained in the dissolving step so that when the glue is finished and ready for the veneers, it is identical with glue produced by Perkins' preferred process (Rec., 36, 38). Defendant's process may be different but its product is the same and, therefore, the product claims are infringed.

When defendant's counsel assert (p. 69) that

> "it was invention to select, as Perkins did a starch of particular water absorptiveness and combine it with a particular quantity of water to make the glue of his patent,"

they are again setting up the false issue. If that was Perkins' invention it was a *process* invention and can only be covered by the process claims not in issue here. Defendant's counsel refer to this process invention and calmly

assert that defendant does not infringe it, all the while ignoring the glue product invention as covered by the claims in suit.

Defendant's counsel (p. 71) refer to plaintiff's brief in the Solva case where plaintiff said the raw cassava there used tested the same as the treated cassava and was a brand already sufficiently degenerated. Defendant's counsel would apparently have the Court believe that this raw cassava was tested by, and responded to, the 9 to 1 boil up test and 170° test, whereas there was no evidence that it came within these tests and reference to the testimony indicated shows that the test was to make what they called a "burst" of it, i. e., dissolve it in the critically small amount of water with the caustic and see if the result is good as animal veneering glue.

On page 73 defendant's counsel quote from plaintiff's brief in the Solva Case where it said, "If a starch be found in commerce already modified so that its viscosity is two or three times that of water by the Perkins' test, then it may not be necessary to further modify it." Quite true, but this is far from saying (as defendant's counsel would apparently have the Court believe) that some other starch, not so far degenerated, may not *also* be used for making the glue.

It may be noted that defendant's counsel on page 76 of their brief quote with approval Dr. Grosvenor's testimony where he states that Perkins' preferred two step process was merely a specific example, but on page 77 they refer to Dr. Grosvenor's testimony where he said, "To aid in recognition of suitable starches * * * Perkins points out several tests." Defendant's counsel do not quote the rest of Dr. Grosvenor's testimony with respect thereto and a reference to the testimony shows that he referred to four so-called tests other than the 9 to 1 boil up test and 170° test and he treated the 9 to 1 boil up test as only applicable when degenerating with acid, and he considers them all as mere indications, not limitations.

We submit that the assertion of defendant's counsel that the glue product claims in suit must have read into them the 9 to 1 boil up test and 170° test (which are merely examples of preferred bases and have only to do with the process invention) is contrary to the decisions of the 2nd C. C. A. in the Standard Case and of the 7th C. C. A. in the Wisconsin Cases (on which defendants allegedly rely) and is also contrary to the decision in the Solva Case and the decisions of Judges Sessions and Cooper, and is also most illogical and contrary to all precedent and authority.

CONCLUSION.

If the Court can find the glue as defined in the product claims disclosed in the prior art, then we submit it is its duty to point out where the glue is so found and hold the claims invalid. If, on the other hand, the Court is not able to find this glue disclosed in the prior art, then we submit that it is a **dangerous precedent** to treat these claims like a **"nose of wax"** (White vs. Dunbar, 119 U. S., 47; 30 L. Ed., 305) and read limitations into the claims, not required by any language found in the claims and contrary to long standing authority, and especially features which are old (such as the first step on the base) and therefore can not add patentability to the claims.

Ever since the decision of this Court in Providence Rubber Co. vs. Goodyear, 76 U. S., 788, it has been elementary patent law that a process and a product are separate entities and that one may obtain a patent for either or both and that a denial of his right to one or more process claims does not involve a refusal of his right to the product however made.

We think the recent decisions of the 2nd and 7th C. C. A. are erroneous in failing to accept the conclusions of this Court in Providence Rubber Co. vs. Goodyear, and also in McCarty vs. Lehigh Valley (ante) where it was held that an element can not be read into a claim for the purpose of making out a case of novelty.

It is generally understood that if an inventor has made a far-reaching contribution to the practical art, his patent will be treated with equal liberality, provided, of course, the language of his claims will so permit as they here do. The pioneer and revolutionary character of the Perkins' glue seems to have been entirely ignored by the 2nd C. C. A. and by the 7th C. C. A. in its last decision.

Prior to Perkins, the only glue suitable for furniture veneering and wood joining was the more expensive animal glue. No one knew or suspected that the high sticking power and other properties required in the wood gluing art could be obtained from starch. All experience suggested the contrary. Perkins produced such a starch glue only after years of intelligent effort and of experimentation.

This glue, **not the process of making it, or the base**, has revolutionized the art of furniture veneering.

Under the recent decisions of the 2nd and 7th C. C. A., anyone may freely make the identical glue product which Perkins first gave to the world after years of patient and extended experiment, and the patent in suit is worthless.

What incentive is left for inventors to invent if their patents for valuable and revolutionizing improvements are to be thus mutilated and practically destroyed by the Courts?

It is hard for respondent's counsel to believe that a Court which fully understands the facts, can hold that Perkins only invented a two-step process or a particular base, which is not, and the patent indicates is not, essential to make the new glue. Especially is this so when the two-step idea and the base, which are relied upon for novelty were both old in the prior art Gerson & Sachse patent.

We submit the recent decisions of the 2nd and 7th C. C. A. cannot be reconciled with principle or authority. (See footnote.)

The decision of the Second Circuit has been treated editorially as one which cannot be easily reconciled with principle or authority. In a discus-

(*Footnote continued on next page.*)

It is unnecessary to state that we were astounded at the view taken by the 2nd and 7th C. C. A. in the recent cases. Feeling the decisions to be of great importance, not only as they affect those cases and the parties thereto, but because of their effect as precedents for patent cases generally, we submitted the matter to the late Judge E. Henry Lacombe, formerly and for many years presiding Judge of the U. S. Circuit Court of Appeals for the Second Circuit, and requested his opinion thereon. Judge Lacombe's report, of course, does not have any weight as a judicial opinion, yet it so concisely sets forth the issues and what we believe to be the correct determination thereof, that we take

---

sion of this case in the Journal of the Patent Office Society, Washington, D. C. (August, 1923 issue), the editors so say. The article in full is as follows:

"Current Court Decisions.

Emerson Stringham and Manuel C. Rosa.

PERKINS GLUE COMPANY vs. STANDARD FURNITURE COMPANY, C. C. A.—2 Hough, Cir. J., 287 Fed., 109.

Perkins reissue patent 13,436, claims 13, 28, 30, 31 and 38, for glue and method of making it, held not infringed.

Infringement—Patented product made by other than the patented method. The patent was for a glue and process of making the same. The process included two steps each old in itself. Defendant's glue was made from a natural product which was the same as the substance resulting from the first step in the patented process. A District Court in a different circuit had ruled that the patent was limited to the two-step process and the product of that process. In the present suit the lower Court had held the product to be an infringement, even though produced by a different method. Reversed.

A patentably novel product is infringed by that product, irrespective of any difference in the method of manufacture. General Electric Company vs. Laco-Phillips Company, 233 Fed., 96 (C. C. A.—2; 1916). Proctor & Gamble Company vs. Berlin Mills Company, 256 Fed., 23; 263 O. G., 633 (C. C. A.—2; 1918). Dunn Wire-Cut Brick Company vs. Toronto Fire Clay Company, 259 Fed., 258; 270 O. G., 480 (C. C. A.—6; 1919). Maurer vs. Dickerson, 113 Fed., 870 (C. C. A.—3; 1902). Contra. Downs vs. Teter-Heany Development Company, 150 Fed., 122 (C. C. A.—3; 1907). In the instant case the two products seem to have been identical, leaving only the question of patentability in the product. **The holding of non-infringement cannot easily be reconciled with principle or authority."**

the liberty of quoting therefrom as follows, as part of our argument:

"I have read the patent, all the opinions and the briefs on both sides you left with me; some of them have been reread. As a result I have quite definite ideas as to the facts and status of the patent.

The facts I understand to be these. Before Perkins there was glue, prepared wholly or in part from animal substances. That glue had characteristics and capacities which made it the best known adhesive for veneering work. No glue possessing the same characteristics and capacities and made wholly of vegetable and/or mineral substances was known in the art. Perkins first produced such a non-animal glue by processes which he described in his patent. That non-animal glue was an entirely new product. It had advantages over the animal glue, because it had no odor, could be used cold and was cheaper than animal glue. That the new product was accepted by the public as a useful article is shown by its extensive use. **That its discovery involved patentable invention seems plain,** since it took several years of study and experiment to produce it.

Under these circumstances I know of no reason why such new product was not patentable independent of the process. Perkins, of course, could get no patent for it unless he disclosed to others in his specifications some way in which it could be produced or obtained, so he set forth his process or processes in the patent, and as usual, claimed everything in sight (the base, the sub steps, etc.).

Ever since the decision of the Goodyear case, I have supposed it to be elementary patent law, that a process and a product were different entities; that one might obtain a patent for either or both; and that denial of his right to obtain a patent for one did not involve a refusal of his right to the other.

So far as I can see this new product is susceptible of identification irrespective of any reference to the process. **If it has all the characteristics and capacities of the animal glue of the prior art without containing any animal substance, and is novel, useful and a result of the inventive faculties, it is patentable.** I think the C. C. A., Seventh, in the Solva Case **did intend to sustain the claims for the product irrespective of the two-step**

process. Except on this construction of its opinion, I can find no intelligent explanation of its sustaining the three product claims, Nos. 28, 30, 31.

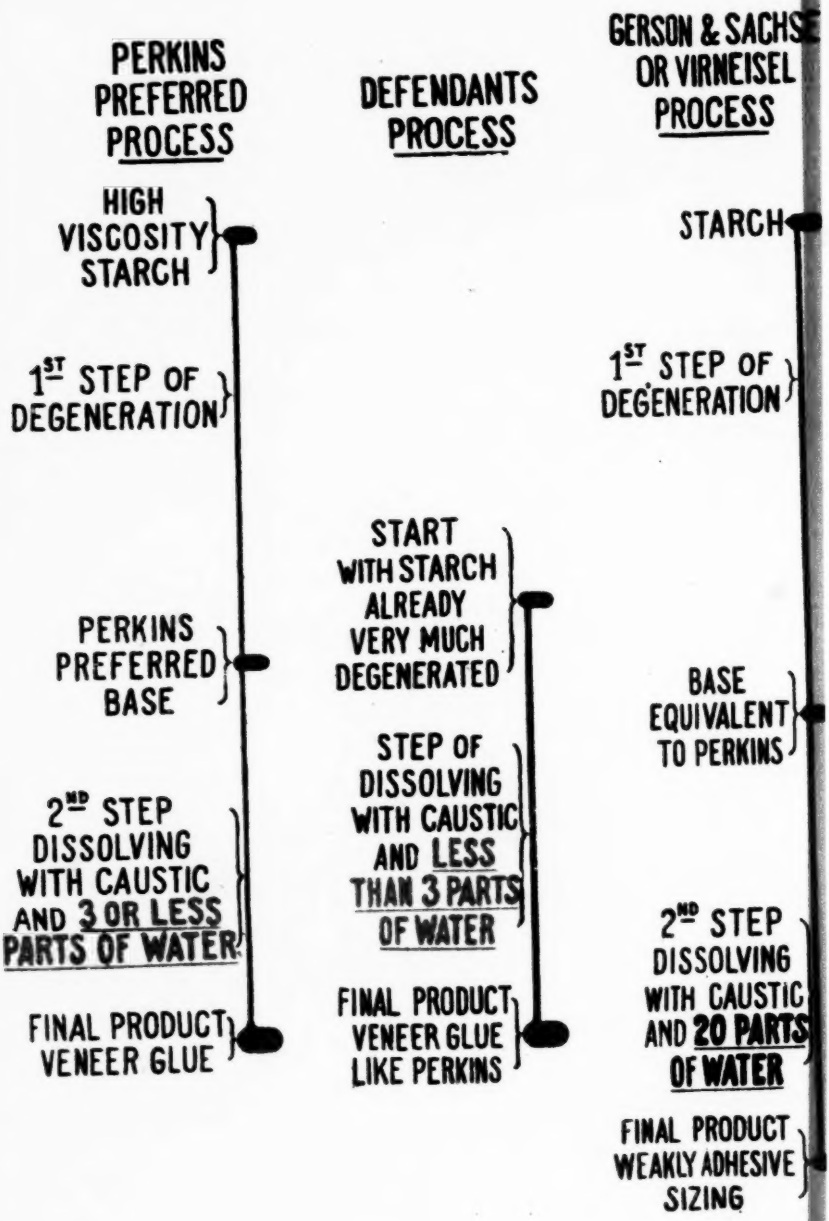
I think that C. C. A. Seventh in the Gould Case and C. C. A. Second in the Standard Furniture Case went astray because they failed to accept the conclusions of the Supreme Court in the Goodyear Case that a claim of a patent covering a new product (and this product is new and readily distinguishable from the old vegetable sizes and pastes as well as from the old animal glue, of which it is a functional equivalent), may be sustained, although a claim or a patent for the process by means of which the patentee actually produced such new product may be rejected. I fully concur in Judge Cooper's opinion. If I were now on the bench, in some circuit other than the Seventh and the Second, in which the decisions of the C. C. A. would be constraining, **I should unhesitatingly hold as he has, despite these decisions and thus make it possible to obtain certiorari and a decision of the Supreme Court,** reaffirming or reversing its deliverance in the Goodyear case."

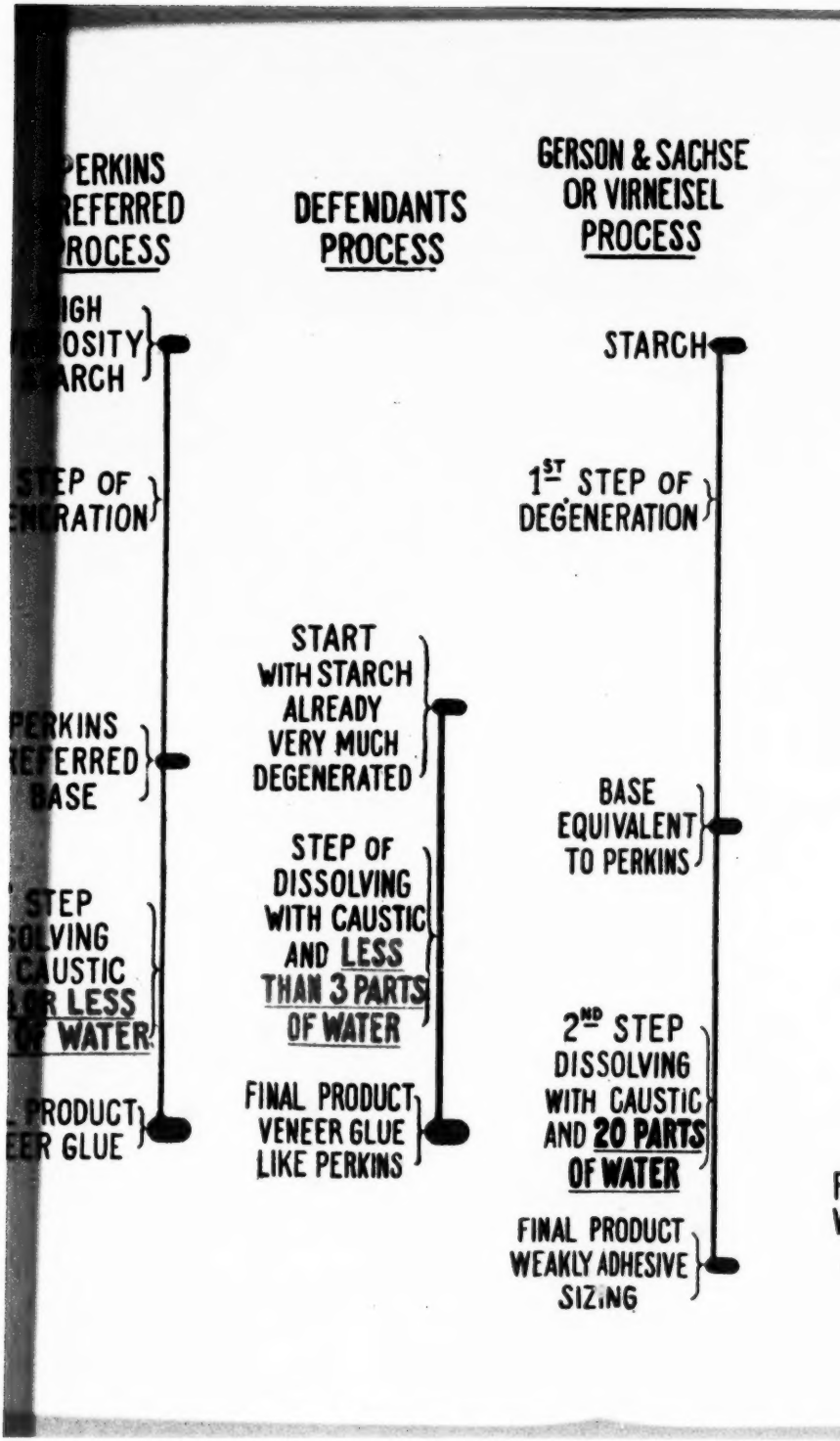
It seems incredible that the law applied to the facts as proved in this case can deny commensurate patent protection and the usual patent protection to the successors of the late Mr. Perkins, who gave to the art this pioneer and valuable achievement that filled a long felt want in the wood panel industry.

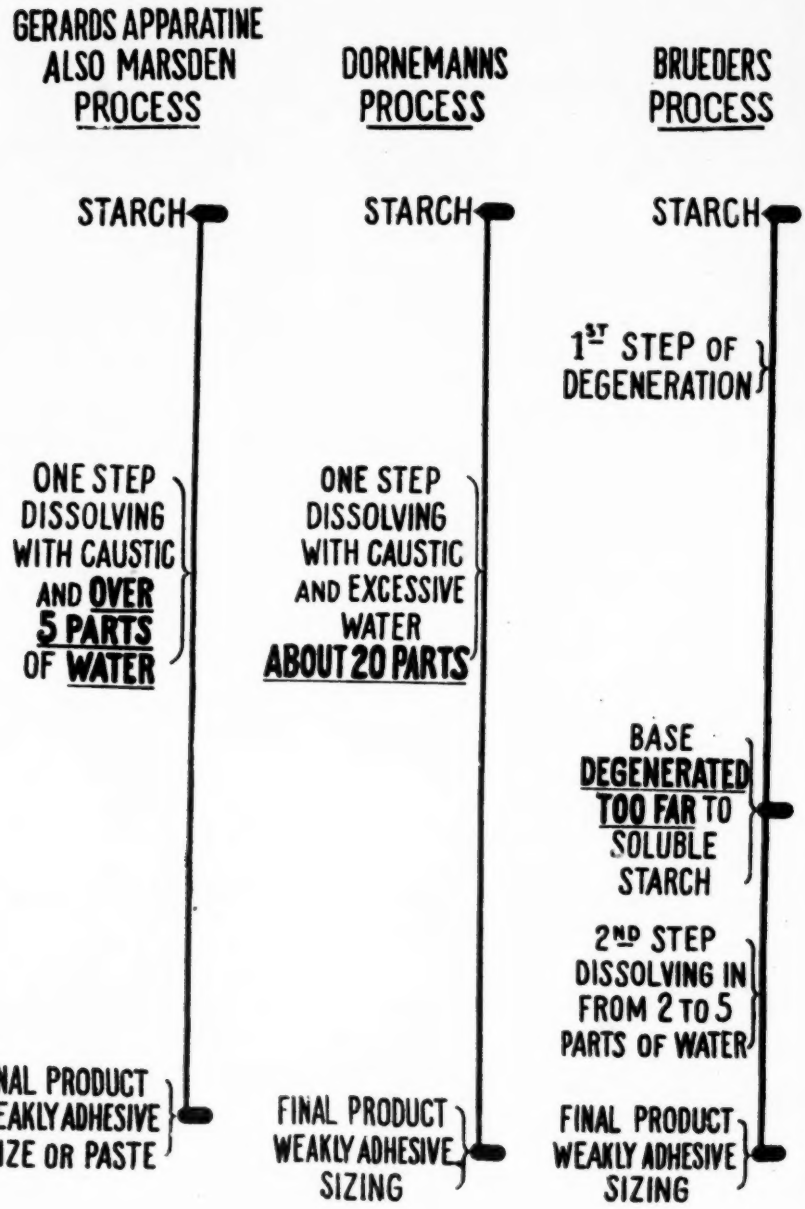
We submit that the decision of the 6th C. C. A. below should be *affirmed.*

GORHAM CROSBY,
Counsel for Respondent.

S. MORTIMER WARD, JR.,
of Counsel for Respondent.


PERKINS PREFERRED PROCESS
HIGH VISCOSITY STARCH
1ST STEP OF DEGENERATION
PERKINS PREFERRED BASE
2ND STEP DISSOLVING WITH CAUSTIC AND 3 OR LESS PARTS OF WATER
FINAL PRODUCT VENEER GLUE
DEFENDANTS PROCESS
START WITH STARCH ALREADY VERY MUCH DEGENERATED
STEP OF DISSOLVING WITH CAUSTIC AND LESS THAN 3 PARTS OF WATER
FINAL PRODUCT VENEER GLUE LIKE PERKINS
GERSON & SACHSE OR VIRNEISEL PROCESS
STARCH
1ST STEP OF DEGENERATION
BASE EQUIVALENT TO PERKINS
2ND STEP DISSOLVING WITH CAUSTIC AND 20 PARTS OF WATER
FINAL PRODUCT WEAKLY ADHESIVE SIZING


PERKINS REFERRED PROCESS
IGH OSITY ARCH
STEP OF ERATION
PERKINS REFERRED BASE
STEP OLVING CAUSTIC OR LESS OF WATER
PRODUCT ER GLUE
DEFENDANTS PROCESS
START WITH STARCH ALREADY VERY MUCH DEGENERATED
STEP OF DISSOLVING WITH CAUSTIC AND LESS THAN 3 PARTS OF WATER
FINAL PRODUCT VENEER GLUE LIKE PERKINS
GERSON & SACHSE OR VIRNEISEL PROCESS
STARCH
1ST STEP OF DEGENERATION
BASE EQUIVALENT TO PERKINS
2ND STEP DISSOLVING WITH CAUSTIC AND 20 PARTS OF WATER
FINAL PRODUCT WEAKLY ADHESIVE SIZING


GERARDS APPARATINE
ALSO MARSDEN
PROCESS
DORNEMANNS
PROCESS
BRUEDERS
PROCESS
STARCH
STARCH
STARCH
1ST STEP OF
DEGENERATION
ONE STEP
DISSOLVING
WITH CAUSTIC
AND OVER
5 PARTS
OF WATER
ONE STEP
DISSOLVING
WITH CAUSTIC
AND EXCESSIVE
WATER
ABOUT 20 PARTS
BASE
DEGENERATED
TOO FAR TO
SOLUBLE
STARCH
2ND STEP
DISSOLVING IN
FROM 2 TO 5
PARTS OF WATER
NAL PRODUCT
EAKLY ADHESIVE
IZE OR PASTE
FINAL PRODUCT
WEAKLY ADHESIVE
SIZING
FINAL PRODUCT
WEAKLY ADHESIVE
SIZING